PRELIMINARY STORMWATER MANAGEMENT REPORT

HAWK RIDGE DEVELOPMENT
LIV (HAWKRIDGE) LP
TOWNSHIP OF SEVERN

PREPARED BY:

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CROZIER
CONSULTING ENGINEERS

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Revision No.	Submission	Submission Date
0	1st Submission Draft Plan Approval	September 2024

1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) has been retained by LIV (Hawk Ridge) LP (LIV Communities) to complete a Preliminary Stormwater Management in support of an Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA) and Draft Plan of Subdivision Application for the proposed development located at 1151 Hurlwood Lane in the Township of Severn (Township), County of Simcoe (County). The proposed development will herein be referred to as the Subject Development/Subject Lands.

The Subject Lands are approximately 126 ha and are bounded by agricultural lands and open space to the north, Burnside Line to the east, the proposed Inch Farm Development Lands and Highway 11 to the south, and Uhthoff Line to the west. The municipal boundary between the Township of Severn and City of Orillia is located west of the site, along Highway 11. Approximately 26 ha of the Subject Lands are proposed for re-development. Refer to **Figure 1** for the Site Location Plan.

The Concept Plan for the Subject Development was prepared by Biglieri Group (August 2024) and has been included as **Figure 2**. The elements envisioned within the Concept Plan include a mix of low density single detached units (290) and medium density townhouse units (560) for a total of 850 units. The Concept Plan also includes two (2) stormwater management blocks, a series of municipal infrastructure blocks to support sanitary and water servicing, and 20 m right-of-way allowances and parkland/natural heritage area.

Crozier is part of a team of consultants providing support for this development. Other members of the consulting team include:

- Biglieri Group (Planning)
- Azimuth Environmental Consulting Inc. (Azimuth) (Environmental)
- Green Geotechnical Ltd. (Geotechnical)
- Crozier (Civil, Transportation Engineering & Hydrogeological)
- Hutchinson Environmental Sciences (Hutchinson) (Assimilative Capacity Study)

These consultants have prepared studies/plans to support the planning application. This report prepared by Crozier should be read in conjunction with the work of the other team members.

This Preliminary Stormwater Management Report has been prepared to outline the proposed stormwater management strategy for the site. The reader is directed to the Master Servicing Report, Functional Servicing Report, Flow Assessment Report and Traffic Impact Study for additional details regarding the Subject Lands.

2.0 BACKGROUND

The Subject Lands are currently designated as Open Space and Environmental Protection Area per Schedule D of the Township of Severn Official Plan (June 2024) and as Commercial per Schedule G4 of the Township of Severn Zoning By-Law 2010-65. The Subject Lands also fall within the South of Division Road Secondary Plan Area, that lies between Highway 11 (east), Highway 12 (south) and Division Road (west). Per Section 3.7.13 of the County of Simcoe Official Plan (2023), development within this area should follow the policies outlined in the Township of Severn's South of Division Road Secondary Plan. The purpose of the Secondary Plan is to outline major road systems and future land use patterns prior to the occurrence of major development. The Subject Lands are currently located outside of the Township of Severn's Settlement Boundary.

A Pre-Consultation Meeting with the Township of Severn was held on June 21, 2024. It was identified during the meeting that the preferred method to bring the Subject Lands into the Township's settlement boundary is via an Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) Application. As the Subject Lands are located within the Secondary Plan, there is an increased priority to develop as this area has been selected for targeted growth. With that being said, growth within the Subject Lands must not impede the future development of other currently zoned areas within the Secondary Plan.

The Township of Severn is currently undertaking a Servicing Master Plan to evaluate the water, wastewater, and stormwater servicing strategies to accommodate future growth within the Township over the next 30 years. The Master Plan is being completed in accordance with the requirements set out in Phase 1 and 2 of the Municipal Class Environmental Assessment (2015) (MCEA). Civica Infrastructure (Civica) was retained by the Township to complete the Servicing Master Plan and it is our understanding that the Subject Lands and the South of Division Road Secondary Plan Area will be evaluated as part of this assessment. Through correspondence with the Township and Civica, it is understood that servicing this area of Severn, herein, referred to as the Study Area, from existing municipal systems is not a feasible alternative. As there is no existing municipal infrastructure within the Study Area, new infrastructure and systems will be required to service these lands. As such, a Schedule C Municipal Class Environmental Assessment (EA) will be required for the water and wastewater systems, in accordance with the policies outlined in the MCEA (2015).

Per direction from the Township and County, the Official Plan Amendment process will be required in advance of the completion of an Environmental Assessment.

The current investigation has been undertaken based on the pre-consultation meeting and follow-up discussions, as well as a review of material acquired from the Township. In addition, several documents/plans were reviewed during this engineering assessment. They include:

- Design Guidelines for Drinking Water Systems (Ministry of Environment, 2008)
- Design Guidelines for Sewage Works (Ministry of Environment, 2008)
- Township of Severn Engineering Standards (Ainley Group, 2023)

3.0 SITE DESCRIPTION

The Subject Lands are currently characterized an active golf 36-hole golf course featuring tee decks, bunkers and offline irrigation ponds. The main branch of the Silver Creek traverses through the center of the Subject Lands flowing in a northwesterly direction, as does the general topography of the lands. There are several smaller tributaries of the Silver Creek which also traverse the Subject Lands. As such, a portion of the lands is designated Environmental Protection Area. Silver Creek is a gently winding watercourse that is contained in a shallow well-defined channel.

A Geotechnical Investigation was completed by Green Geotechnical Ltd. in September of 2024 for the Subject Lands. Within the investigation, twenty-four (24) boreholes and twenty-three (23) monitoring wells were advanced across the site to determine subsurface conditions and understand groundwater conditions across the site. The boreholes revealed that the site is underlain by silt and sand content ranging from some sand to sandy and trace to some clay content. Groundwater levels were recorded between 223.10 m and 239.45 m. The reader is directed to the Preliminary *Geotechnical Investigation Report (Green Geotechnical Ltd., September 2024)* for further details.

A Hydrogeological Assessment Report was completed by Crozier in September of 2024 for the Subject Lands. The purpose of this report was to outline the hydrogeological regime of the site and identify the seasonal high groundwater levels. The Subject Lands are located within the Severn Sound Source Protection Area. A portion of the site is classified as Highly Vulnerable Aquifers (HVA) and approximately 50% of the site is a Significant Groundwater Recharge Area (SGRA). As a result of the HVA and SGRA presence, a Best Management Practice approach will need to be implemented and mitigative strategies should be considered to prevent impacts to drinking water sources in the area. As mentioned above, 23 monitoring wells were installed by Green Geotechnical. Three (3) sets of groundwater readings were collected by Crozier between March and September of 2024. Based on the readings taken to date, the seasonal highs range from -0.09 mbgl to 0.18 mbgl and seasonal lows from 0.19 mbgl to 2.17 mbgl (metres below ground level). The reader is directed to the *Hydrogeological Assessment Report (Crozier, September 2024)* for further information regarding best management practices and implications of high groundwater levels on the proposed design. This report has been provided under separate cover.

4.0 STORMWATER MANAGEMENT (SWM)

4.1 DESIGN CRITERIA

The management of stormwater and site drainage for the Subject Development must comply with the policies and standards of the various agencies including the Township of Severn, and the Ministry of Environment, Conservation and Parks (MECP).

The stormwater management criteria for the Subject Development includes the following:

- Development Standard
  - Urban cross section for public roadway with 5-year storm sewer system.
  - Minor and major drainage system to convey frequent and infrequent rainfall/runoff events.
  - An optimal lot grade at 2%.

- Water Quality Control
  - 80% removal efficiency of total suspended solids (TSS) per MECP 'enhanced protection' requirements.

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

- Erosion Control
  - 48-hour detention of the 25 mm storm event.

4.2 EXISTING DRAINAGE CONDITIONS

The Subject Development is located within the Silver Creek Watershed Area, which drains to the North River approximately 6 km downstream of the site, and then ultimately to Georgian Bay. The Silver Creek bisects the Subject Development and flows from the south to the north, consistent with the general topography of the site.

Onsite drainage flow routes and pre-development drainage conditions were determined through review of topographic survey of the of the Subject Lands (Rudy Mak Surveying, November 2023), as well as several site walks.

To facilitate the pre-development stormwater analysis, the following three (3) internal catchments and two (2) external catchments were identified based on existing drainage conditions.

- **Catchment 101:** This catchment is approximately 40.48 ha and is located in the southeast corner of the Subject Lands and is bounded by the Area 3 and Inch Farm developments. Runoff from this catchment flows in a northward direction and discharges into the Silver Creek.

- **Catchment 102:** This catchment is approximately 5.53 ha and is located in the southwest corner of the Subject Lands, along Uhthoff Line. Runoff from this catchment flows in a northward direction and discharges into the Silver Creek.

- **Catchment 103:** This catchment is approximately 65.15 ha and consists of the majority of the northern portion of the Subject Lands. Runoff from this catchment flows in a northward direction and discharges into the Silver Creek.

- **Catchment EXT-1:** This catchment is approximately 12.02 ha and is characterized as the southwest portion of the Hawk Ridge Estate Community. Runoff from this catchment drains to the west towards Catchment 101 and Catchment 103.

- **Catchment EXT-2:** This catchment is approximately 6.48 ha and is characterized as the northwest portion of the Hawk Ridge Estate Community. Runoff from this catchment drains to the west towards Catchment 103.

Figure 3 Illustrates the pre-development internal and external catchments, as well as the topography of the Subject Development. Please refer to **Appendix A** for the pre-development hydrologic parameter sheets.

4.3 PROPOSED DRAINAGE CONDITIONS

The Subject Development has been designed to respect and potentially enhance Silver Creek by implementing a buffer setback from the watercourse and respecting the natural heritage features within the Subject Lands. The natural elements of Silver Creek and the associated floodplain have been considered throughout the design of elements such as Stormwater Management Facilities (SWMF) and drainage ditches/outfalls.

To facilitate the post-development stormwater analysis, the following seven (7) internal catchments have been delineated based on the proposed drainage conditions. Please refer to **Appendix A** for the post-development hydrologic parameter sheets. Post-development catchments have been illustrated in **Figure 4**.

- **Catchment 201:** This catchment area is approximately 28.88 ha and consists of the southeast portion of the development. Runoff from this catchment is proposed to be controlled by the stormwater management facility (SWMF #1), before discharging to the Silver Creek to the west.

  Catchment SWMF-1: This catchment area is approximately 1.97 ha. This catchment represents the SWMF located on the east side of the development, that controls flows from Catchment 201.

- **Catchment 202:** This catchment area is approximately 9.47 ha and consists of the northwestern portion of the development. Runoff from this catchment is proposed to be controlled by stormwater management facility (SWMF #2), before discharging stormwater to

the Silver Creek to the east.

- **Catchment SWMF-2:** This catchment area is approximately 0.74 ha. This catchment represents the SWMF located on the west side of the development, that controls flow from Catchment 202.

- **Catchment 203:** This catchment area is approximately 2.60 ha and consists of the southeastern portion of the development. Runoff from this catchment is proposed to be controlled by on-site controls prior to discharging stormwater to the Silver Creek to the east.

- **Catchment 204:** This catchment represents the area within the Subject Lands that is outside of the proposed development area. This catchment is approximately 65.13 ha, and is characterized by the floodplain of the Silver Creek, the upgraded Hawk Ridge 18-hole golf course, and areas of Natural Heritage.

- **Catchment EXT-1:** This catchment is approximately 12.02 ha and is characterized as the southwest portion of the Hawk Ridge Estate Community. Runoff from this catchment is proposed to be captured and conveyed to Silver Creek via a ditch which by-passes the proposed development area.

- **Catchment EXT-2:** This catchment is approximately 6.48 ha and is characterized as the northwest portion of the Hawk Ridge Estate Community. Runoff from this catchment is proposed to be captured and conveyed to Silver Creek via a ditch which by-passes the proposed development area.

4.4 STORMWATER MANAGEMENT (SWM) STRATEGY

The Subject Development will be constructed to a fully urbanized system complete with storm sewers, curb, and gutter. A dual drainage approach will consist of minor and major stormwater flow routes. The minor drainage system will consist of storm sewers and catch basins sized to convey the 5-year design storm event. Major drainage system flows will be conveyed to either one (1) of the tow (2) SWM Facilities or the on-site control system overland via the alignment of the internal road network. Both the minor and major drainage systems will discharge stormwater into a SWM Facility or on-site control.

4.5 HYDROLOGIC ANALYSIS

4.5.1 QUANTITY CONTROL

Hydrologic modelling was prepared for the pre-development and post-development scenarios using the stormwater management hydrologic computer program Visual OTTHYMO 6.2 (VO). The purpose of the modelling was to determine the detention storage volumes required for the Subject Lands to ensure post-development peak flow rates do not exceed the pre-development target flows (i.e., quantity control).

In order to accurately assess the peak flows from the individual catchments, the NASHYD command in VO was used to model rural conditions, whereas the STANHYD command was used to model urban development conditions. 2, 5, 10, 25, 50 and 100-year rainfall was simulated using a 4-hour Chicago and 24-hour SCS Type II distribution consistent with Township Standards. Rainfall depths and intensities were based on an IDF curve obtained from the MTO IDF lookup tool; this has been provided in **Appendix B.**

The SCS distribution produced larger pre-development peak flows than the Chicago distribution, therefore the SCS distribution was used to establish the target peak flow rates to match in the post-development condition.

Visual OTTHYMO modelling results for the pre-development and post-development models have been provided in **Appendix B**.

4.5.1.1 PRE-DEVELOPMENT MODEL SET-UP

To establish pre-development flows from the site, a pre-development hydrologic model was created using VO. The Subject Development and external drainage area were split into five (5) catchments based on the existing drainage conditions.

Pre-development catchment delineations have been presented in **Figure 3.** A summary of the hydrologic parameters utilized in the pre-development model as well as the peak flow outputs have been provided below in **Table 1** and **Table 2** below.

Table 1: Summary of Pre-Development Hydrologic Parameters

Catchment	Area (ha)	Impervious Area (ha)	Pervious Area (ha)	Composite Curve Number	Initial Abstraction (mm)	Time to Peak (hr)
101	40.48	1.95	38.53	67.1	6.41	0.90
102	5.53	0.33	5.20	69.6	5.44	0.46
103	65.15	0.81	64.34	71.4	6.70	0.67
EXT-1	12.02	1.41	10.61	72.0	4.86	0.73
EXT-2	6.48	1.79	4.69	74.4	5.63	0.37

Table 2: Summary of Pre-Development Flow Rates

Return Period (Years)	101 (40.48 ha)	102 (5.53 ha)	103 (65.15 ha)	EXT-1 (12.02 ha)	EXT-2 (6.48 ha)	Site Total (129.66 ha)
4 Hour Chicago (m^3/s)						
2	0.176	0.042	0.260	0.089	0.055	0.540
5	0.335	0.080	0.485	0.161	0.106	1.013
10	0.465	0.111	0.665	0.219	0.147	1.392
25	0.630	0.150	0.891	0.291	0.200	1.870
50	0.795	0.190	1.114	0.362	0.252	2.346
100	0.954	0.227	1.327	0.429	0.302	2.800
24 Hour SCS Type II (m^3/s)						
2	0.464	0.117	0.625	0.220	0.157	1.367
5	0.806	0.200	1.076	0.367	0.268	2.354
10	1.069	0.263	1.417	0.476	0.352	3.104
25	1.391	0.339	1.829	0.608	0.453	4.016
50	1.702	0.412	2.223	0.733	0.550	4.890
100	1.993	0.481	2.590	0.849	0.640	5.707
Regional	2.269	0.418	3.392	0.845	0.523	6.800

4.5.1.2 POST-DEVELOPMENT MODEL SET-UP

The post-development model was prepared by replacing the pre-development catchments with the post-development catchments identified in Section 4.3. Catchments EXT-1 and EXT-2 and associated hydrologic parameters from the pre-development model were maintained. Refer to **Figure 4** for the Post-Development Drainage Plan. A summary of the hydrological parameters utilized in the post-development model have been summarized in the table below.

Table 3: Summary of Post-Development Hydrologic Parameters

Catchment	Area (ha)	Impervious Area (ha)	Pervious Area (ha)	Composite Curve Number	Initial Abstraction (mm)	Time to Peak (hr)
201	29.60	19.25	10.35	69	5	N/A
202	10.65	6.92	3.74	77.53	5	N/A
203	2.60	1.94	0.66	70	5	N/A
204	65.60	0.58	65.02	34.4	6.51	1.68
SWMF-1	1.97	0.99	0.99	69	5	N/A
SWMF-2	0.74	0.37	0.37	70	5	N/A
EXT-1	12.02	1.41	10.61	72	4.86	0.73
EXT-2	6.48	1.79	4.69	74.4	5.63	0.37

SWM Facility 1 and SWM Facility 2 have been designed as "wet" stormwater management facilities, each complete with a preliminary multi-stage outlet to address both quality and quantity control requirements. The preliminary outlet structure for SWMF#1 (East) will consist of a 175 mm diameter extended detention orifice complete with a 0.75 m rectangular weir. SWMF#2 (West) will consist of a 105 mm diameter extended detention orifice complete with a 0.32 m rectangular weir. The extended

detention orifices are proposed to be positioned at the permanent pool elevation for both facilities. The secondary rectangular weir structures have been included within both facilities above the extended detention storage elevation to control effluent for storms exceeding the 25 mm event.

It is noted that on-site controls will be provided in the Golf Vill Block to provide quantity control. Flow from this system will discharge east to the Silver Creek. A detailed stage-storage discharge curve and system details will be provided in a subsequent submission.

Please refer to **Appendix C** for supporting calculations for the SWM Facilities.

Using the ROUTE RESERVOIR command in VO, the volume of detention storage required to attenuate the post-development peak flows from the Subject Development to target peak flow levels was determined based on a storage – discharge relationship. The ROUTE RESERVOIR command was used to model the aboveground wet ponds, as well as the underground storage facility. A summary of storage volumes required for each of the SWM Facilities can be found in **Table 4,** below.

Table 4: Summary of SWM Facility Storage Volumes

Return Period (Years)	Storage Volume (m^3)	
	4 Hour Chicago	**24 Hour SCS Type II**
SWM Facility 1 (Wet Pond) (18,595 m^3)		
2	5,315	7,693
5	7,453	9,899
10	8,477	11,465
25	9,443	13,261
50	10,342	14,933
100	11,169	16,428
Regional	18,435	
SWM Facility 2 (Wet Pond) (6,002 m^3)		
2	2,013	2,658
5	2,526	3,484
10	2,829	4,059
25	3,187	4,709
50	3,523	5,300
100	3,835	5,827
Regional	5,945	

An emergency spillway has also been included within the design of both wet SWM facilities to safely convey water to Silver Creek. Should a rainfall event occur which exceeds the Regional event, or the outlet structure becomes blocked, the emergency spillway will convey stormwater outflow to Silver Creek. The emergency spillway has been sized to convey 8.4 m^3/s and 3.4 m^3/s for SWMF#1 and SWMF#2, respectively.

The operating characteristics for both SWM Facilities has been provided in **Table 5**, and the overall post-to-pre peak flow comparison can be seen in **Table 6** below.

Table 5: SWMF-1 & SWMF-2 Facility Operating Characteristics

Event		Storage Volume (m^3) SWMF-1	Water Surface Elevation (m) SWMF-1	Storage Volume (m^3) SWMF-2	Water Surface Elevation (m) SWMF-2
Chicago	2-Year	5,315	232.19	2,013	229.37
	5-Year	7,453	232.43	2,526	229.54
	10-Year	8,477	232.54	2,829	229.64
	25-Year	9,443	232.64	3,187	229.75
	50-Year	10,342	232.74	3,523	229.85
	100-Year	11,169	232.82	3,835	229.94
SCS	2-Year	7,693	232.46	2,658	229.59
	5-Year	9,899	232.69	3,484	229.84
	10-Year	11,465	232.85	4,059	230.01
	25-Year	13,261	233.02	4,709	230.18
	50-Year	14,933	233.18	5,300	230.33
	100-Year	16,428	233.31	5,827	230.46
25mm		4,118	232.04	1,580	229.21
Regional		18,435	233.48	5,945	230.49

Table 6: Summary of Site Post-Development Flow Rates

Event		Pre-Development (m^3/s)	Post-Development (m^3/s)
Chicago	2-Year	0.54	0.40
	5-Year	1.01	0.79
	10-Year	1.39	1.14
	25-Year	1.87	1.59
	50-Year	2.35	2.02
	100-Year	2.80	2.43
SCS	2-Year	1.37	0.98
	5-Year	2.35	1.89
	10-Year	3.10	2.59
	25-Year	4.02	3.45
	50-Year	4.89	4.26
	100-Year	5.71	5.03
25mm		0.37	0.28
Regional		6.80	6.80

As demonstrated in **Table 4** and **Table 5,** sufficient storage has been provided for all storm events up to and including the Regional event, based on the High-Water Level for SWMF1 (233.50 m) and SWMF (230.50 M), respectively. As evidenced by **Table 6,** 'Post-to-Pre' quantity control has been provided for all storm events up to and including the Regional-year event.

4.5.2 QUALITY CONTROL

Stormwater quality to an Enhanced Protection level (*Stormwater Management Planning and Design Manual*, Ministry of the Environment, 2003) will be provided via the two (2) "wet" SWM facilities, as well as through on-site quality controls for the Golf Villas block. On-site controls will be designed as part of a forthcoming submission.

Erosion control will be principally achieved by incorporating 48-hour extended detention of the 25 mm storm event into the operation of the SWM Facilities.

Table 7: Summary of Water Quality Sizing Requirements for Wet Pond

Water Quality Requirements			
Description	**Storage Criteria[1] SWMF1/SWMF2 (m^3/ha)**	**Required Volume/ Provided Volume SWMF1 (m^3)**	**Required Volume/ Provided Volume SWMF2 (m^3)**
Permanent Pool	171/171	5,398/7,650	1,948/1,953
Extended Detention	40/40	4,551/4,551	1,762/1,762

1. This is based on 64% imperviousness for a contributing drainage area of 31.57ha for SWMF#1 and 64% imperviousness for a contributing drainage area of 11.39 ha for SWMF#2. Per MOE SWM Manual Table 3.2, 31 m^3/ha and 31 m^3/ha of water quality storage is required for infiltration practices SWMF 1 and SWMF 2 respectively.

Based on the results presented in **Table 7** above, both SWM Facilities have sufficient permanent pool and extended detention storage volumes to meet water quality requirements. Supplemental water quality calculations have been provided in **Appendix C**.

5.0 EROSION AND SEDIMENT CONTROL

Erosion and Sediment controls will be installed prior to the commencement of any construction activities and will be maintained until the site is stabilized or as directed by the Site Engineer and/or the Township of Severn. Controls will be inspected after each significant rainfall event and maintained in proper working condition. Further details on the specified controls are provided below.

- Silt Fence

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

- Mud Mat

A rock mud mat will be installed at the entrance to the construction zone in order to prevent mud tracking from the site onto the surrounding lands and perimeter roadway network.

- Dust Suppression

During construction activities, the Contractor is responsible to ensure that measures for dust suppression are provided as required, such as the application of water or lime.

- Flow Check Dams

Temporary straw bale check dams are to be installed at the downstream end of the ditch or swales to promote the settling of suspended solids, and to reduce flow velocities. Sediment accumulation will be monitored and removed, as necessary.

6.0 CONCLUSIONS & RECOMMENDATIONS

Based on the foregoing, we conclude that the proposed residential development can be adequately serviced from a stormwater management perspective.

1. Stormwater quantity control will be achieved via the use of two (2) SWM Facilities and on-site controls for the Golf Villa Block. The SWM Facilities have been designed to store runoff from all events up to and including the Regional Event to meet post-to-pre peak flow objectives.

2. Silver Creek has been selected as the designated outlet for the site.

3. Water quality to an 'Enhanced Treatment' level will be provided via a combination of the proposed wet ponds and on-site controls (i.e., OGS).

4. Erosion control will be achieved via 48-hour extended detention of the 25 mm event.

5. In accordance with Township standards, erosion and sediment control measures will be implemented during construction.

Therefore, we recommend approval of the Planning Applications for the Subject Development from the perspective of engineering servicing requirements.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

Brendan Hummelen, P.Eng.
Project Engineer

C.F. CROZIER & ASSOCIATES INC.

Tyler Mills, E.I.T.
Engineering Intern

APPENDIX A
Hydrologic Parameters

Active coordinate

44° 37' 45" N, 79° 26' 45" W (44.629167,-79.445833) Modify selection

Retrieved: Thu, 13 Jun 2024 12:49:42 GMT

Map options: Modify selection | Show/hide gauging stations | Re-center selection

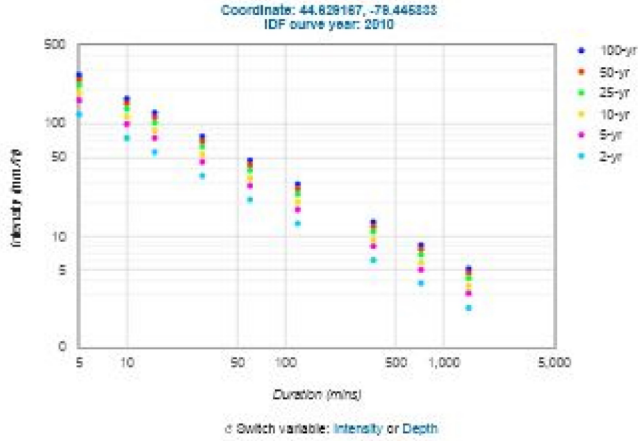
Location summary

These are the locations in the selection.

IDF Curve: 44° 37' 45" N, 79° 26' 45" W (44.629167,-79.445833)

Results

An IDF curve was found.



Switch variable: Intensity or Depth

Coefficient summary

Data year: 2010
IDF curve year: 2010

Click a return period in the table header for more detail.

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	21.3	28.3	33.0	38.8	43.1	47.4
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	121.0	74.5	56.1	34.6	21.3	13.1	6.1	3.8	2.3
5-yr	160.7	99.0	74.6	45.9	28.3	17.4	8.1	5.0	3.1
10-yr	187.4	115.5	87.0	53.6	33.0	20.3	9.4	5.8	3.6
25-yr	220.4	135.8	102.3	63.0	38.8	23.9	11.1	6.8	4.2
50-yr	244.8	150.8	113.6	70.0	43.1	26.5	12.3	7.6	4.7
100-yr	269.2	165.8	124.9	76.9	47.4	29.2	13.5	8.3	5.1

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	10.1	12.4	14.0	17.3	21.3	26.2	36.5	45.0	55.4
5-yr	13.4	16.5	18.6	23.0	28.3	34.9	48.5	59.6	73.7
10-yr	15.6	19.2	21.7	26.8	33.0	40.7	56.6	69.7	85.9
25-yr	18.4	22.6	25.6	31.5	38.8	47.8	66.5	82.0	101.0
50-yr	20.4	25.1	28.4	35.0	43.1	53.1	73.9	91.1	112.2
100-yr	22.4	27.6	31.2	38.5	47.4	58.4	81.3	100.1	123.4

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APPENDIX A1
Hydrologic Parameters
Pre-Development

CROZIER CONSULTING ENGINEERS

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME 101
D.A. AREA (ha) 40.48

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Gyerub Loam	GUR	B	74.1	30.0
Alliston Sandy Loam	ALT	B	23.7	9.6
Tioga Sandy Loam	TIG	A	2.2	0.9
				0
Total Area				40.48

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GUR	1.4	98	0.25	98		98	0.19	98		98	1.84	180.00
ALT		98	0.11	98		98		98		98	0.11	10.54
TIG		98	0.01	98		98		98		98	0.01	0.98
0		98		98		98		98		98	0	0
Subtotal Area	1.4		0.3642		0		0.19		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
GUR	7.43	60	0.00	65	0.31	50	20.41	69	0.00	74	28.15	1869.82
ALT	2.62	60	0.00	65	0.67	50	6.20	69	0.00	74	9.49	618.62
TIG	0.40	32	0.00	38	0.00	50	0.48	49	0.00	62	0.88	36.39
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	10.45		0.00		0.98		27.10		0.00			

Composite Area Calculations		
	Total Pervious Area	38.53
	Total Impervious Area	1.95
	% Impervious	4.83%
	Composite Curve Number	67.1
	Total Area Check	40.48

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Gyerub Loam		Alliston Sandy		Tioga Sandy		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	10.45	104.46	0.25	7	0.25	3	0.08	0		0	2.54
Meadow	8	0	0	0.28	0	0.28	0	0.10	0		0	0
Wetland	16	0.98	15.72	0.05	0	0.05	1	0.05	0		0	0.05
Lawn	5	27.10	135.49	0.22	20	0.22	6	0.10	0		0	5.90
Cultivated	7	0	0	0.35	0	0.35	0	0.22	0		0	0
Impervious	2	1.95	3.91	0.95	2	0.95	0	0.95	0		0	1.86
Composite IA		40.48	6.41	Composite Runoff Coefficient								0.26

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	880	13	1.48%	2.3	0.28	0.87	0.59	0.59	0.69	0.46	1.34	0.90
Watercourse	280	5.5	2%	2.3	0.32	0.24	0.16	0.75				

Appropriate calculated time to peak:	0.90	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME 102
D.A. AREA (ha) 5.53

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Alliston Sandy Loam	ALT	B	100.0	5.53
				0
				0
Total Area				5.53

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	0.1	CN	Area	CN	Area	A*CN
ALT		98	0.08	98	0.15	98	0.1	98		98	0.33	32.39
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal	0		0.0805		0.15		0.1		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
ALT	0.68	60	0.00	65	0.00	50	4.52	69	0.00	74	5.20	352.65
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
	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal	0.68		0.00		0.00		4.52		0.00			

Composite Area Calculations		
	Total Pervious Area	5.2
	Total Impervious Area	0.33
	% Impervious	5.98%
	Composite Curve Number	69.6
	Total Area Check	5.53

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Alliston Sandy Loam		0		0				
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.68	6.80	0.35	0.68		0.00		0.00		0	0.24
Meadow	8	0.00	0.00	0.40	0.00		0.00		0.00		0	0
Wetland	16	0.00	0.00	0.05	0.00		0.00		0.00		0	0
Lawn	5	4.52	22.60	0.22	4.52		0.00		0.00		0	0.99
Cultivated	7	0.00	0.00	0.55	0.00		0.00		0.00		0	0
Impervious	2	0.33	0.66	0.95	0.33		0.00		0.00		0	0.31
Composite		5.53	5.44	Composite Runoff Coefficient								0.28

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	280	3.5	1.25%	2.3	0.26	0.30	0.20	0.20	0.21	0.14	0.69	0.46

Appropriate calculated time to peak:	0.46	Appropriate Method:	Airport

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CROZIER CONSULTING ENGINEERS

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME 103
D.A. AREA (ha) 65.15

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 103

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Alliston Sandy Loam	ALT	B	9.7	6.29
Gyerub Loam	GUR	B	12.3	8
Granby Sandy Loam	GNY	C	63.4	41.32
Tioga Sandy Loam	TIG	A	6.0	3.9
Vasey Sandy Loam-	VSY	B	8.7	5.64
Total Area				65.15

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
ALT		98	0.04	98		98		98		98	0.0379	3.71
GUR		98	0.06	98		98		98		98	0.0577	5.6546
GNY		98	0.45	98	0.21	98		98		98	0.656	64.288
TIG		98	0.03	98		98		98		98	0.0259	2.5382
VSY		98	0.03	98		98		98		98	0.0349	3.4202
Subtotal	0		0.60		0.21		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
ALT	0.97	60	0.00	65	0.23	50	5.05	69	0.00	74	6.25	418.28
GUR	0.99	60	0.00	65	0.00	50	6.95	69	0.00	74	7.94	539.08
GNY	12.30	73	0.00	38.00	1.06	50	27.30	79	0.00	82	40.66	3107.82
TIG	2.44	32	0.00	76.00	0.00	50	1.43	49	0.00	62	3.87	148.29
VSY	2.87	60	0.00	65	0.09	50	2.64	69	0.00	74	5.61	359.20
Subtotal	19.58		0.00		1.38		43.37		0.00			

Composite Area Calculations		
	Total Pervious Area	64.34
	Total Impervious Area	0.81
	% Impervious	1.25%
	Composite Curve Number	71.4
	Total Area Check	65.15

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient										
Landuse	IA (mm)	Area (ha)	A * IA	Alliston Sandy		Gyerub Loam		Granby Sandy		Tioga Sandy		Vasey Sandy		
				RC	Area	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	19.58	195.842	0.25	0.97	0.25	0.99	0.25	12.30	0.08	2.44	0.25	2.87	4.48
Meadow	8	0	0	0.28	0.00	0.28	0.00	0.28	0.00	0.10	0.00	0.28	0.00	0.00
Wetland	16	1.3809	22.0946	0.05	0.23	0.05	0.00	0.05	1.06	0.05	0.00	0.05	0.09	0.07
Lawn	5	43.37	216.86	0.22	5.05	0.22	6.95	0.22	27.30	0.10	1.43	0.22	2.64	9.37
Cultivated	7	0	0	0.35	0.00	0.35	0.00	0.35	0.00	0.22	0.00	0.35	0.00	0.00
Impervious	2	0.78	1.56	0.95	0.04	0.95	0.06	0.95	0.66	0.95	0.03	0.95	0.03	0.77
Composite		65.12	6.70			Composite Runoff Coefficient								0.23

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	500	6	1.20%	2.3	0.25	0.55	0.37	0.37	1.11	0.75	2.05	1.37
Watercourse	1250	10	1%	2.3	0.21	1.69	1.13	1.50				
Appropriate calculated time to peak:					1.37	Appropriate Method:			Airport			

CROZIER CONSULTING ENGINEERS

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME EXT-1
D.A. AREA (ha) 12.02

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment EXT-1

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Vasey Sandy Loam-Stoney Phase	VSY	B	30.4	3.66
Guerin Loam	GUR	B	69.6	8.36
Total Area				12.02

Impervious Landuses Present:													
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
VSY	0.08	98		98	0.24	98	0.35	98		98	0.66	64.68
GUR	0.69	98		98	0.24	98	0.35	98		98	1.27	124.46
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal	0.77		0		0.47		0.69		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
VSY	0.51	60	0.00	65	0.00	50	2.49	69	0.00	74	3.00	202.41
GUR	0.00	60	0.00	65	0.00	50	7.09	69	0.00	74	7.09	489.21
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal	0.51		0.00		0.00		9.58		0.00			

Composite Area Calculations		
	Total Pervious Area	10.09
	Total Impervious Area	1.93
	% Impervious	16.06%
	Composite Curve Number	73.3
	Total Area Check	12.02

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Vasey Sandy Loam-Stoney Phase		Guerin Loam		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.51	5.10	0.35	0.51	0.35	0.00		0.00		0	0.1785
Meadow	8	0.00	0.00	0.35	0.00	0.35	0.00		0.00		0	0
Wetland	16	0.00	0.00	0.05	0.00	0.05	0.00		0.00		0	0
Lawn	5	9.58	47.90	0.28	2.49	0.28	7.09		0.00		0	2.6824
Cultivated	7	0.00	0.00	0.45	0.00	0.45	0.00		0.00		0	0
Impervious	2	1.93	3.86	0.95	0.66	0.95	1.27		0.00		0	1.8335
Composite		12.02	4.73	Composite Runoff Coefficient								0.39

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	545	3.5	0.64%	5	0.40	0.38	0.25	0.25	0.44	0.30	1.04	0.70

Appropriate calculated time to peak:	0.70	Appropriate Method:	Airport

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME EXT-2
D.A. AREA (ha) 6.48

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Vasey Sandy Loam-	VSY	B	53.7	3.48
Guerin Loam	GUR	B	46.3	3.00
				0
Total Area				6.48

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
VSY	0.16	98		98	0.14	98	0.285	98		98	0.59	57.33
GUR	0.16	98		98	0.14	98	0.285	98		98	0.59	57.33
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal	0.32		0		0.28		0.57		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
VSY	1.18	60	0.00	65	0.00	50	1.72	69	0.00	74	2.90	189.14
GUR	0.71	60	0.00	65	0.00	50	1.71	69	0.00	74	2.42	160.25
	0.00		0.00		0.00		0.00		0.00		0.00	0.00
	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal	1.89		0.00		0.00		3.42		0.00			

Composite Area Calculations		
	Total Pervious Area	5.31
	Total Impervious Area	1.17
	% Impervious	18.06%
	Composite Curve Number	71.6
	Total Area Check	6.48

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Vasey Sandy Loam-Stoney Phase		Guerin Loam		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	1.89	18.90	0.35	1.18	0.35	0.71		0.00		0	0.6615
Meadow	8	0.00	0.00	0.35	0.00	0.35	0.00		0.00		0	0
Wetland	16	0.00	0.00	0.05	0.00	0.05	0.00		0.00		0	0
Lawn	5	3.42	17.10	0.28	1.72	0.28	1.71		0.00		0	0.9576
Cultivated	7	0.00	0.00	0.45	0.00	0.45	0.00		0.00		0	0
Impervious	2	1.17	2.34	0.95	0.59	0.95	0.59		0.00		0	1.1115
Composite		6.48	5.92	Composite Runoff Coefficient								0.42

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	300	3.5	1.17%	2.3	0.25	0.34	0.22	0.22	0.23	0.15	0.61	0.41

Appropriate calculated time to	0.41	Appropriate Method:	Airport

APPENDIX A2
Hydrologic Parameters
Post-Development

Project Name:	Hawk Ridge	**D.A. NAME**	**201**
Project Number:	1935-6133	**D.A. AREA (ha)**	**29.6**
Date:	2024-06-12		
By:	TM/MC		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guerin Loam	GUR	B	69.6	20.598
Alliston Sandy Loam	ALT	B	30.4	9.00
				0
				0
Total Area Check				29.6

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
GUR	4.00	98	1.00	98	3.50	98	4.00	98		98	12.50	1225
ALT	1.50	98	1.00	98	2.25	98	2.00	98		98	6.8	661.5
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	5.50		2.00		5.75		6.00		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
GUR	0	60	0	65	0	50	8.10	69	0	74	8.1	558.7
ALT	0	60	0	65	0	50	2.25	69	0	74	2.3	155.4
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		10.35		0			

	Pervious Area Calculations	Total Pervious Area	10.35
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	13.25
		Total Indirectly Connected Area	6.00
		Total Impervious Area	19.25
		% X imp	45
		% T imp	65
		Total Area Check	29.6

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	10.35	51.75
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	0.5	444	0.013

Project Name:	Hawk Ridge	**D.A. NAME**	**SWMF1**
Project Number:	1935-6133	**D.A. AREA (ha)**	**1.97**
Date:	2024-06-12		
By:	TM/MC		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment SWMF1

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guerin Loam	GUR	B	90.7	1.79
Alliston Sandy Loam	ALT	B	9.3	0.18
				0
				0
Total Area Check				1.97

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
GUR		98		98		98		98	0.99	98	1.0	96.5
ALT		98		98		98		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		0.985			

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
GUR	0		0		0		0.80	69	0		0.80	55.35
ALT	0		0		0		0.18	69	0		0.18	12.61
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.985		0			

	Pervious Area Calculations	Total Pervious Area	0.99
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	0.99
		Total Indirectly Connected Area	0.00
		Total Impervious Area	0.99
		% X imp	50.0
		% T imp	50.0
		Total Area Check	1.97

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	0.99	4.93
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	0.5	115	0.013

Project Name:	Hawk Ridge	**D.A. NAME**	**202**
Project Number:	1935-6133	**D.A. AREA (ha)**	**10.65**
Date:	2024-06-12		
By:	TM/MC		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 202

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Granby Sandy Loam	GNY	C	76.9	8.19
Alliston Sandy Loam	ALT	B	15.0	1.60
Vasey Sandy Loam-	VSY	B	8.1	0.87
				0
Total Area Check				10.65

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
GNY	2.00	98	0.50	98	1.10	98	1.40	98		98	5.00	490.00
ALT	0.50	98	0.10	98	0.20	98	0.50	98		98	1.30	127.40
VSY	0.20	98	0.02	98	0.20	98	0.20	98		98	0.62	60.27
0		98		98		98		98		98	0	0
Subtotal Area	2.7		0.615		1.5		2.1		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
GNY	0	73	0	76	0	50	3.19	79	0	82	3.19	251.78
ALT	0	60	0	65	0	50	0.30	69	0	74	0.30	20.49
VSY	0	60	0	65	0	50	0.25	69	0	74	0.25	17.32
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		3.735		0			

	Pervious Area Calculations	Total Pervious Area	3.74
		Composite Pervious Curve Number	77.53
	Impervious Area Calculations	Total Directly Connected Area	4.82
		Total Indirectly Connected Area	2.10
		Total Impervious Area	6.92
		% X imp	45
		% T imp	65
		Total Area Check	10.65

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	3.7	18.7
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	0.5	266	0.013

Project Name:	Hawk Ridge	**D.A. NAME**	**SWMF-2**
Project Number:	1935-6133	**D.A. AREA (ha)**	**0.74**
Date:	2024-06-12		
By:	TM/MC		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment SWMF-2

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Granby Sandy Loam	GNY	C	100	0.74
				0
				0
				0
Total Area Check				0.74

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
GNY		98		98		98		98	0.37	98	0.37	36.26
0		98		98		98		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		0.37			

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
GNY	0		0		0		0.37	70	0		0.37	25.9
0	0		0		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		0.37		0			

Pervious Area Calculations	Total Pervious Area	0.37
	Composite Pervious Curve Number	70
Impervious Area Calculations	Total Directly Connected Area	0.37
	Total Indirectly Connected Area	0
	Total Impervious Area	0.37
	% X imp	50.0
	% T imp	50.0
	Total Area Check	0.74

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	0.37	1.85
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	0.5	70	0.013

Project Name:	Hawk Ridge	**D.A. NAME**	**203**
Project Number:	1935-6133	**D.A. AREA (ha)**	**2.6**
Date:	2024-06-12		
By:	TM/MC		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Alliston Sandy Loam	ALT	B	100	2.6
				0
				0
				0
Total Area Check				2.6

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
ALT	0.7	98	0.4	98	0.32	98	0.52	98		98	1.94	190.12
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0.7		0.4		0.32		0.52		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
ALT	0		0		0		0.66	70	0		0.66	46.2
0	0		0		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		0.66		0			

Pervious Area Calculations	Total Pervious Area	0.66	
	Composite Pervious Curve Number	70	
Impervious Area Calculations	Total Directly Connected Area	1.42	
	Total Indirectly Connected Area	0.52	
	Total Impervious Area	1.94	
	% X imp	55	
	% T imp	75	
	Total Area Check	2.6	

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	0.66	3.3
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.25
Impervious	2.0	0.5	132	0.013

CROZIER CONSULTING ENGINEERS

Project Name: Hawk Ridge
Project Number: 1935-6133
Date: 2024-06-12
By: TM/MC

D.A. NAME 204
D.A. AREA (ha) 65.6

Hydrologic Parameters: CALIB NASHYD Command
Post Development Drainage Area: Catchment 204

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guerin Loam	GUR	B	6.6	4.36
Alliston Sandy Loam	ALT	B	32.9	21.58
Vasey Sandy Loam-Stoney Phase	VSY	B	10.9	7.16
Granby Sandy Loam	GNY	C	49.5	32.50
Total Area				65.60

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
GUR		98	0.05	98		98		98		98	0.05	4.70
ALT	0.1	98	0.12	98		98		98		98	0.18	17.33
VSY		98	0.02	98		98		98		98	0.02	1.47
GNY		98	0.34	98		98		98		98	0.34	33.32
Subtotal Area	0.056		0.52		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area (ha)	CN	Area (ha)	CN	Area	CN	Area	A*CN
GUR	1.06	60	0.00	65	0.07	50	3.18	69	0.00	74	4.31	286.66
ALT	2.83	60	0.00	65	0.65	50	17.92	69	0.00	74	21.40	1438.80
VSY	1.95	60	0.00	65	0.00	50	5.20	69	0.00	74	7.15	475.46
GNY	11.24	73	0.00	76	0.66	50	20.26	79	0.00	82	32.16	
Subtotal Area	17.08		0.00		1.38		46.56		0.00			

Composite Area Calculations		
	Total Pervious Area	65.02
	Total Impervious Area	0.580
	% Impervious	0.88%
	Composite Curve Number	34.4
	Total Area Check	65.60

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Guerin Loam		Alliston Sandy		Vasey Sandy		Granby Sandy		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	17.08	170.8	0.35	1	0.35	3	0.35	2	0.42	11	6.76
Meadow	8	0	0	0.35	0	0.35	0	0.35	0	0.45	0	0.00
Wetland	16	1.38	22.08	0.05	0	0.05	1	0.05	0	0.05	1	0.07
Lawn	5	46.56	232.8	0.28	3	0.28	18	0.28	5	0.40	20	15.47
Cultivated	7	0	0	0.45	0	0.45	0	0.45	0	0.60	0	0.00
Impervious	2	0.58	1.16	0.95	0	0.95	0	0.95	0	0.95	0	0.55
Composite IA		65.60	6.51	Composite Runoff Coefficient								0.35

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	480	6	1%	2.3	0.26	0.52	0.35	0.35	1.86	1.24	2.51	1.68
Watercourse	2200	10	0.5%	2.3	0.16	3.94	2.64	2.99				

Appropriate calculated time to peak:	1.68	Appropriate Method:	Airport

APPENDIX B
Visual OTTHYMO

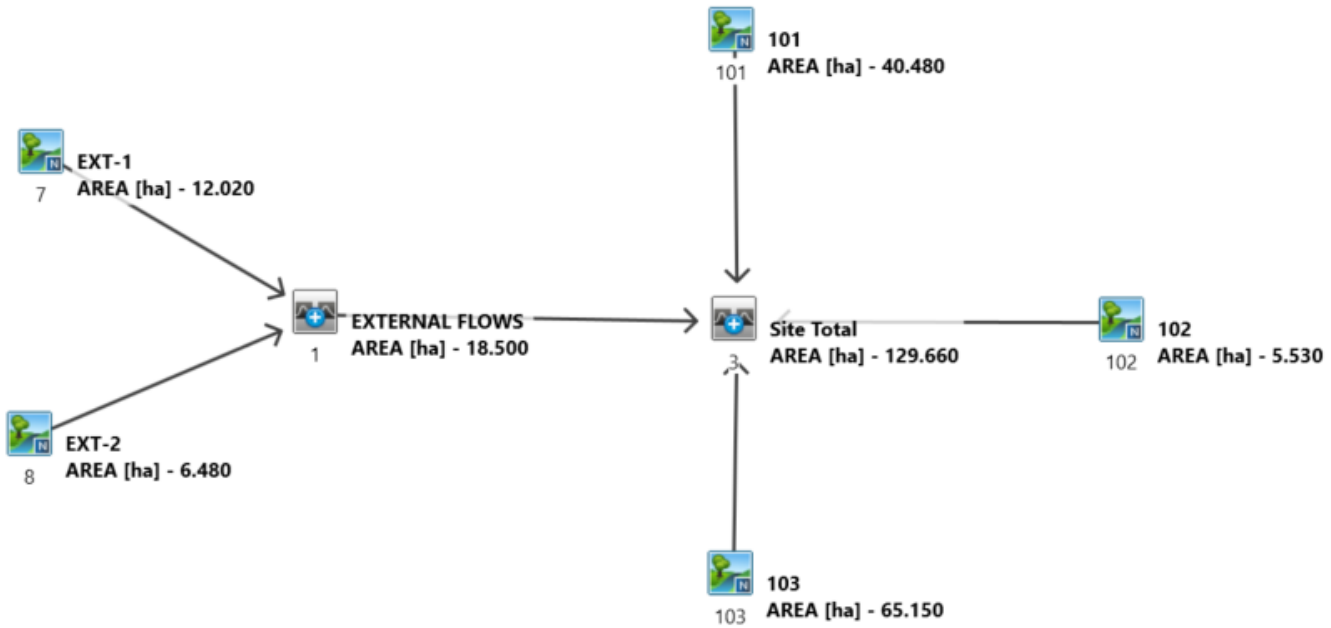
APPENDIX B1
Visual OTTHYMO
Pre-Development Model

CROZIER & ASSOCIATES
Consulting Engineers

Project: Hawk Ridge
Project No.: 1935-6133
File: Model Schematic
Design by: HB
Date: 2024.09.30

Visual OTTHYMO 6.1 - Model Schematic

Pre-Development



```
*****************************************
** SIMULATION:a.2yr  4hr 10min Chicago **
*****************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 372.655
| Ptotal= 32.32 mm |                          B=   0.000
--------------------                          C=   0.699
                       used in:   INTENSITY =  A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.72	1.00	12.86	2.00	5.37	3.00	3.13
0.17	3.04	1.17	74.53	2.17	4.75	3.17	2.95
0.33	3.47	1.33	15.78	2.33	4.27	3.33	2.79
0.50	4.08	1.50	9.95	2.50	3.90	3.50	2.65
0.67	5.05	1.67	7.59	2.67	3.59	3.67	2.53
0.83	6.91	1.83	6.25	2.83	3.34	3.83	2.42

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  40.48   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.41   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.90

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42


```
    Unit Hyd Qpeak  (cms)=   1.718

    PEAK FLOW       (cms)=   0.176 (i)
    TIME TO PEAK    (hrs)=   2.667
    RUNOFF VOLUME    (mm)=   4.461
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.138

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   5.53   Curve Number   (CN)= 69.6
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.44   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.46

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

```
    Unit Hyd Qpeak  (cms)=   0.459

    PEAK FLOW       (cms)=   0.042 (i)
    TIME TO PEAK    (hrs)=   1.917
    RUNOFF VOLUME    (mm)=   5.241
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.162

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

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--------------------
| CALIB            |
| NASHYD   (  0103)|   Area    (ha)=  65.15   Curve Number   (CN)= 71.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.37

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

```
    Unit Hyd Qpeak  (cms)=   1.816

    PEAK FLOW       (cms)=   0.260 (i)
    TIME TO PEAK    (hrs)=   3.500
    RUNOFF VOLUME    (mm)=   5.153
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.159

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   6.48   Curve Number   (CN)= 71.6
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.92   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.41

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

```
    Unit Hyd Qpeak  (cms)=   0.604

    PEAK FLOW       (cms)=   0.055 (i)
    TIME TO PEAK    (hrs)=   1.833
    RUNOFF VOLUME    (mm)=   5.480
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.170

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0007)|   Area    (ha)=  12.02   Curve Number   (CN)= 73.3
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.73   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.70

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.089 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 6.336
TOTAL RAINFALL (mm)= 32.318
RUNOFF COEFFICIENT = 0.196

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		12.02	0.089	2.25	6.34
+ ID2= 2 (0008):		6.48	0.055	1.83	5.48
ID = 3 (0001):		18.50	0.136	2.08	6.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	0.136	2.08	6.04
+ ID2= 2 (0101):		40.48	0.176	2.67	4.46
ID = 3 (0003):		58.98	0.297	2.42	4.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0003):		58.98	0.297	2.42	4.96
+ ID2= 2 (0102):		5.53	0.042	1.92	5.24
ID = 1 (0003):		64.51	0.331	2.33	4.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0003):		64.51	0.331	2.33	4.98
+ ID2= 2 (0103):		65.15	0.260	3.50	5.15
ID = 3 (0003):		129.66	0.540	2.83	5.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:b.5yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters: A= 495.124
Ptotal= 42.94 mm	B= 0.000
	C= 0.699

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.61	1.00	17.09	2.00	7.14	3.00	4.16
0.17	4.03	1.17	99.02	2.17	6.30	3.17	3.92
0.33	4.60	1.33	20.97	2.33	5.67	3.33	3.71
0.50	5.42	1.50	13.22	2.50	5.18	3.50	3.52
0.67	6.72	1.67	10.08	2.67	4.78	3.67	3.36
0.83	9.19	1.83	8.30	2.83	4.44	3.83	3.21

CALIB			
NASHYD (0101)	Area (ha)= 40.48	Curve Number (CN)= 67.1	
ID= 1 DT= 5.0 min	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.90		

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.335 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 8.284
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.193

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

CALIB			
NASHYD (0102)	Area (ha)= 5.53	Curve Number (CN)= 69.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.46		

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 9.472
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.221

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

CALIB			
NASHYD (0103)	Area (ha)= 65.15	Curve Number (CN)= 71.4	
ID= 1 DT= 5.0 min	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.37		

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 0.485 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 9.517
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.222

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

CALIB					
NASHYD (0008)	Area (ha)= 6.48	Curve Number (CN)= 71.6			
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.41				

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.106 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 9.946
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.232

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

CALIB					
NASHYD (0007)	Area (ha)= 12.02	Curve Number (CN)= 73.3			
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.70				

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.161 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 11.167
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.260

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.161	2.25	11.17
+ ID2= 2 (0008):	6.48	0.106	1.83	9.95
ID = 3 (0001):	18.50	0.252	2.00	10.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.252	2.00	10.74
+ ID2= 2 (0101):	40.48	0.335	2.58	8.28
ID = 3 (0003):	58.98	0.558	2.33	9.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	0.558	2.33	9.05
+ ID2= 2 (0102):	5.53	0.080	1.92	9.47
ID = 1 (0003):	64.51	0.623	2.25	9.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	0.623	2.25	9.09
+ ID2= 2 (0103):	65.15	0.485	3.33	9.52
ID = 3 (0003):	129.66	1.013	2.67	9.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:c.10yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters: A= 577.353
Ptotal= 50.07 mm	B= 0.000
	C= 0.699
	used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.21	1.00	19.92	2.00	8.32	3.00	4.85
0.17	4.70	1.17	115.46	2.17	7.35	3.17	4.57
0.33	5.37	1.33	24.45	2.33	6.62	3.33	4.32
0.50	6.32	1.50	15.42	2.50	6.04	3.50	4.11
0.67	7.83	1.67	11.76	2.67	5.57	3.67	3.91
0.83	10.71	1.83	9.68	2.83	5.18	3.83	3.74

CALIB					
NASHYD (0101)	Area (ha)= 40.48	Curve Number (CN)= 67.1			
ID= 1 DT= 5.0 min	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.90				

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.465 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 11.333
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.226

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

CALIB					
NASHYD (0102)	Area (ha)= 5.53	Curve Number (CN)= 69.6			
ID= 1 DT= 5.0 min	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.46				

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.111 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 12.802
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.256

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

CALIB			
NASHYD (0103)	Area (ha)=	65.15	Curve Number (CN)= 71.4
ID= 1 DT= 5.0 min	Ia (mm)=	6.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.37	

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 0.665 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 12.962
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.259

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

CALIB			
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.147 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 13.450
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.269

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

CALIB			
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.219 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 14.911
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.298

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

ADD HYD (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):		12.02	0.219	2.25	14.91
+ ID2= 2 (0008):		6.48	0.147	1.83	13.45
ID = 3 (0001):		18.50	0.345	2.00	14.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):		18.50	0.345	2.00	14.40
+ ID2= 2 (0101):		40.48	0.465	2.58	11.33
ID = 3 (0003):		58.98	0.769	2.33	12.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):		58.98	0.769	2.33	12.29
+ ID2= 2 (0102):		5.53	0.111	1.83	12.80
ID = 1 (0003):		64.51	0.859	2.25	12.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):		64.51	0.859	2.25	12.34
+ ID2= 2 (0103):		65.15	0.665	3.25	12.96
ID = 3 (0003):		129.66	1.392	2.67	12.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:d.25yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters:	A= 670.080
Ptotal= 58.11 mm		B= 0.000
		C= 0.699
	used in: INTENSITY =	A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.89	1.00	23.12	2.00	9.66	3.00	5.63
0.17	5.46	1.17	134.01	2.17	8.53	3.17	5.30
0.33	6.23	1.33	28.38	2.33	7.68	3.33	5.02
0.50	7.34	1.50	17.89	2.50	7.01	3.50	4.77
0.67	9.09	1.67	13.64	2.67	6.46	3.67	4.54
0.83	12.43	1.83	11.24	2.83	6.01	3.83	4.35

CALIB	
NASHYD (0101)	Area (ha)= 40.48 Curve Number (CN)= 67.1
ID= 1 DT= 5.0 min	Ia (mm)= 6.41 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.90

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.630 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 15.167
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.261

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

CALIB	
NASHYD (0102)	Area (ha)= 5.53 Curve Number (CN)= 69.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.44 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.46

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.150 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 16.955
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.292

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

CALIB	
NASHYD (0103)	Area (ha)= 65.15 Curve Number (CN)= 71.4
ID= 1 DT= 5.0 min	Ia (mm)= 6.70 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.37

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 0.891 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 17.258
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.297

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

CALIB	
NASHYD (0008)	Area (ha)= 6.48 Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.92 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.200 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 17.808
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.306

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

CALIB	
NASHYD (0007)	Area (ha)= 12.02 Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)= 4.73 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.291 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 19.530
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.336

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

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0007):    12.02   0.291     2.17    19.53
     + ID2= 2 (  0008):     6.48   0.200     1.75    17.81
       ====================================================
       ID = 3 (  0001):    18.50   0.462     2.00    18.93

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):    18.50   0.462     2.00    18.93
     + ID2= 2 (  0101):    40.48   0.630     2.50    15.17
       ====================================================
       ID = 3 (  0003):    58.98   1.036     2.33    16.35

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

--------------------
| ADD HYD  (  0003)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0003):    58.98   1.036     2.33    16.35
     + ID2= 2 (  0102):     5.53   0.150     1.83    16.95
       ====================================================
       ID = 1 (  0003):    64.51   1.157     2.25    16.40

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

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0003):    64.51   1.157     2.25    16.40
     + ID2= 2 (  0103):    65.15   0.891     3.25    17.26
       ====================================================
       ID = 3 (  0003):   129.66   1.870     2.58    16.83

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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****************************************
** SIMULATION:e.50yr 4hr 10min Chicago **
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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 754.058
| Ptotal= 65.39 mm |                          B=   0.000
--------------------                          C=   0.699
                        used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    5.50 |  1.00   26.02 |  2.00   10.87 |  3.00    6.33
                0.17    6.14 |  1.17  150.80 |  2.17    9.60 |  3.17    5.97
                0.33    7.01 |  1.33   31.93 |  2.33    8.64 |  3.33    5.64
                0.50    8.26 |  1.50   20.13 |  2.50    7.89 |  3.50    5.36
                0.67   10.23 |  1.67   15.35 |  2.67    7.27 |  3.67    5.11
                0.83   13.99 |  1.83   12.65 |  2.83    6.76 |  3.83    4.89


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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  40.48   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.41   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.90

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

                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    5.50 | 1.083   26.02 | 2.083   10.87 |  3.08    6.33
               0.167    5.50 | 1.167   26.02 | 2.167   10.87 |  3.17    6.33
               0.250    6.14 | 1.250  150.80 | 2.250    9.60 |  3.25    5.97
               0.333    6.14 | 1.333  150.80 | 2.333    9.60 |  3.33    5.97
               0.417    7.01 | 1.417   31.93 | 2.417    8.64 |  3.42    5.64
               0.500    7.01 | 1.500   31.93 | 2.500    8.64 |  3.50    5.64
               0.583    8.26 | 1.583   20.13 | 2.583    7.89 |  3.58    5.36
               0.667    8.26 | 1.667   20.13 | 2.667    7.89 |  3.67    5.36
               0.750   10.23 | 1.750   15.35 | 2.750    7.27 |  3.75    5.11
               0.833   10.23 | 1.833   15.35 | 2.833    7.27 |  3.83    5.11
               0.917   13.99 | 1.917   12.65 | 2.917    6.76 |  3.92    4.89
               1.000   13.99 | 2.000   12.65 | 3.000    6.76 |  4.00    4.89
```



```
    Unit Hyd Qpeak  (cms)=   1.718

    PEAK FLOW       (cms)=   0.795 (i)
    TIME TO PEAK    (hrs)=   2.500
    RUNOFF VOLUME    (mm)=  18.957
    TOTAL RAINFALL   (mm)=  65.394
    RUNOFF COEFFICIENT   =   0.290

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   5.53   Curve Number   (CN)= 69.6
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.44   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.46

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

                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    5.50 | 1.083   26.02 | 2.083   10.87 |  3.08    6.33
               0.167    5.50 | 1.167   26.02 | 2.167   10.87 |  3.17    6.33
               0.250    6.14 | 1.250  150.80 | 2.250    9.60 |  3.25    5.97
               0.333    6.14 | 1.333  150.80 | 2.333    9.60 |  3.33    5.97
               0.417    7.01 | 1.417   31.93 | 2.417    8.64 |  3.42    5.64
               0.500    7.01 | 1.500   31.93 | 2.500    8.64 |  3.50    5.64
               0.583    8.26 | 1.583   20.13 | 2.583    7.89 |  3.58    5.36
               0.667    8.26 | 1.667   20.13 | 2.667    7.89 |  3.67    5.36
               0.750   10.23 | 1.750   15.35 | 2.750    7.27 |  3.75    5.11
               0.833   10.23 | 1.833   15.35 | 2.833    7.27 |  3.83    5.11
               0.917   13.99 | 1.917   12.65 | 2.917    6.76 |  3.92    4.89
               1.000   13.99 | 2.000   12.65 | 3.000    6.76 |  4.00    4.89

    Unit Hyd Qpeak  (cms)=   0.459

    PEAK FLOW       (cms)=   0.190 (i)
    TIME TO PEAK    (hrs)=   1.833
    RUNOFF VOLUME    (mm)=  21.031
    TOTAL RAINFALL   (mm)=  65.394
    RUNOFF COEFFICIENT   =   0.322

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

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--------------------
| CALIB            |
| NASHYD   (  0103)|   Area    (ha)=  65.15   Curve Number   (CN)= 71.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.37

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

                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    5.50 | 1.083   26.02 | 2.083   10.87 |  3.08    6.33
               0.167    5.50 | 1.167   26.02 | 2.167   10.87 |  3.17    6.33
               0.250    6.14 | 1.250  150.80 | 2.250    9.60 |  3.25    5.97
               0.333    6.14 | 1.333  150.80 | 2.333    9.60 |  3.33    5.97
               0.417    7.01 | 1.417   31.93 | 2.417    8.64 |  3.42    5.64
               0.500    7.01 | 1.500   31.93 | 2.500    8.64 |  3.50    5.64
               0.583    8.26 | 1.583   20.13 | 2.583    7.89 |  3.58    5.36
               0.667    8.26 | 1.667   20.13 | 2.667    7.89 |  3.67    5.36
               0.750   10.23 | 1.750   15.35 | 2.750    7.27 |  3.75    5.11
               0.833   10.23 | 1.833   15.35 | 2.833    7.27 |  3.83    5.11
               0.917   13.99 | 1.917   12.65 | 2.917    6.76 |  3.92    4.89
               1.000   13.99 | 2.000   12.65 | 3.000    6.76 |  4.00    4.89

    Unit Hyd Qpeak  (cms)=   1.816

    PEAK FLOW       (cms)=   1.114 (i)
    TIME TO PEAK    (hrs)=   3.250
    RUNOFF VOLUME    (mm)=  21.473
    TOTAL RAINFALL   (mm)=  65.394
    RUNOFF COEFFICIENT   =   0.328

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

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| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   6.48   Curve Number   (CN)= 71.6
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.92   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.41

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

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

0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.252 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 22.074
TOTAL RAINFALL (mm)= 65.394
RUNOFF COEFFICIENT = 0.338

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

CALIB			
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

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	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.362 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 24.024
TOTAL RAINFALL (mm)= 65.394
RUNOFF COEFFICIENT = 0.367

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.362	2.17	24.02
+ ID2= 2 (0008):	6.48	0.252	1.75	22.07
ID = 3 (0001):	18.50	0.576	2.00	23.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.576	2.00	23.34
+ ID2= 2 (0101):	40.48	0.795	2.50	18.96
ID = 3 (0003):	58.98	1.301	2.25	20.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	1.301	2.25	20.33
+ ID2= 2 (0102):	5.53	0.190	1.83	21.03
ID = 1 (0003):	64.51	1.453	2.17	20.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	1.453	2.17	20.39
+ ID2= 2 (0103):	65.15	1.114	3.25	21.47
ID = 3 (0003):	129.66	2.346	2.58	20.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:g.2yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\f50b800e
Ptotal= 55.44 mm	Comments: 2yr 24hr 15min SCS Type II (MTO)

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	1.00	12.50	7.98	18.75	1.00
0.25	0.61	6.50	1.00	12.75	4.10	19.00	1.00
0.50	0.61	6.75	1.00	13.00	4.10	19.25	1.00
0.75	0.61	7.00	1.00	13.25	2.99	19.50	1.00
1.00	0.61	7.25	1.22	13.50	2.99	19.75	1.00
1.25	0.61	7.50	1.22	13.75	2.33	20.00	1.00
1.50	0.61	7.75	1.22	14.00	2.33	20.25	0.67
1.75	0.61	8.00	1.22	14.25	1.66	20.50	0.67
2.00	0.61	8.25	1.44	14.50	1.66	20.75	0.67
2.25	0.72	8.50	1.44	14.75	1.66	21.00	0.67
2.50	0.72	8.75	1.55	15.00	1.66	21.25	0.67
2.75	0.72	9.00	1.55	15.25	1.66	21.50	0.67
3.00	0.72	9.25	1.77	15.50	1.66	21.75	0.67
3.25	0.72	9.50	1.77	15.75	1.66	22.00	0.67
3.50	0.72	9.75	2.00	16.00	1.66	22.25	0.67
3.75	0.72	10.00	2.00	16.25	1.00	22.50	0.67
4.00	0.72	10.25	2.55	16.50	1.00	22.75	0.67
4.25	0.89	10.50	2.55	16.75	1.00	23.00	0.67
4.50	0.89	10.75	3.44	17.00	1.00	23.25	0.67
4.75	0.89	11.00	3.44	17.25	1.00	23.50	0.67
5.00	0.89	11.25	5.32	17.50	1.00	23.75	0.67
5.25	0.89	11.50	5.32	17.75	1.00	24.00	0.67
5.50	0.89	11.75	16.41	18.00	1.00		
5.75	0.89	12.00	67.86	18.25	1.00		

6.00	0.89	12.25	7.98	18.50	1.00		

CALIB			
NASHYD (0101)	Area (ha)=	40.48	Curve Number (CN)= 67.1
ID= 1 DT= 5.0 min	Ia (mm)=	6.41	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.90	

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67

2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.464 (i)
TIME TO PEAK (hrs)= 13.167
RUNOFF VOLUME (mm)= 13.850
TOTAL RAINFALL (mm)= 55.440

RUNOFF COEFFICIENT = 0.250

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

CALIB	Area (ha)= 5.53	Curve Number (CN)= 69.6
NASHYD (0102)	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.46	

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67

2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.117 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 15.532

TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.280

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

CALIB	Area (ha)= 65.15	Curve Number (CN)= 71.4
NASHYD (0103)	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 1.37	

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67

2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 0.625 (i)
TIME TO PEAK (hrs)= 13.750

RUNOFF VOLUME (mm)= 15.786
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.285

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

CALIB					
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)=	71.6	
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.41			

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67

2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.157 (i)

TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 16.317
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.294

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

CALIB					
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)=	73.3	
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.70			

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67

2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.220 (i)
TIME TO PEAK (hrs)= 12.917
RUNOFF VOLUME (mm)= 17.953
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.324

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		12.02	0.220	12.92	17.95
+ ID2= 2 (0008):		6.48	0.157	12.58	16.32
ID = 3 (0001):		18.50	0.355	12.75	17.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	0.355	12.75	17.38
+ ID2= 2 (0101):		40.48	0.464	13.17	13.85
ID = 3 (0003):		58.98	0.779	12.92	14.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0003):		58.98	0.779	12.92	14.96
+ ID2= 2 (0102):		5.53	0.117	12.58	15.53
ID = 1 (0003):		64.51	0.877	12.92	15.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)

1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0003):		64.51	0.877	12.92	15.01
+ ID2= 2 (0103):		65.15	0.625	13.75	15.79
ID = 3 (0003):		129.66	1.367	13.17	15.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:h.5yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\d198cf87
Ptotal= 73.66 mm	Comments: 5yr 24hr 15min SCS Type II (MTO)

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	1.33	12.50	10.61	18.75	1.33
0.25	0.81	6.50	1.33	12.75	5.45	19.00	1.33
0.50	0.81	6.75	1.33	13.00	5.45	19.25	1.33
0.75	0.81	7.00	1.33	13.25	3.98	19.50	1.33
1.00	0.81	7.25	1.62	13.50	3.98	19.75	1.33
1.25	0.81	7.50	1.62	13.75	3.09	20.00	1.33
1.50	0.81	7.75	1.62	14.00	3.09	20.25	0.88
1.75	0.81	8.00	1.62	14.25	2.21	20.50	0.88
2.00	0.81	8.25	1.92	14.50	2.21	20.75	0.88
2.25	0.96	8.50	1.92	14.75	2.21	21.00	0.88
2.50	0.96	8.75	2.06	15.00	2.21	21.25	0.88
2.75	0.96	9.00	2.06	15.25	2.21	21.50	0.88
3.00	0.96	9.25	2.36	15.50	2.21	21.75	0.88
3.25	0.96	9.50	2.36	15.75	2.21	22.00	0.88
3.50	0.96	9.75	2.65	16.00	2.21	22.25	0.88
3.75	0.96	10.00	2.65	16.25	1.33	22.50	0.88
4.00	0.96	10.25	3.39	16.50	1.33	22.75	0.88
4.25	1.18	10.50	3.39	16.75	1.33	23.00	0.88
4.50	1.18	10.75	4.57	17.00	1.33	23.25	0.88
4.75	1.18	11.00	4.57	17.25	1.33	23.50	0.88
5.00	1.18	11.25	7.07	17.50	1.33	23.75	0.88
5.25	1.18	11.50	7.07	17.75	1.33	24.00	0.88
5.50	1.18	11.75	21.80	18.00	1.33		
5.75	1.18	12.00	90.16	18.25	1.33		
6.00	1.18	12.25	10.61	18.50	1.33		

CALIB					
NASHYD (0101)	Area (ha)= 40.48	Curve Number (CN)= 67.1			
ID= 1 DT= 5.0 min	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.90				

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88

3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.806 (i)
TIME TO PEAK (hrs)= 13.167
RUNOFF VOLUME (mm)= 23.581
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.320

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

CALIB							
NASHYD (0102)	Area (ha)= 5.53	Curve Number (CN)= 69.6					
ID= 1 DT= 5.0 min	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 0.46						

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88

2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.200 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 25.974
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.353

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

CALIB							
NASHYD (0103)	Area (ha)= 65.15	Curve Number (CN)= 71.4					
ID= 1 DT= 5.0 min	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 1.37						

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88

2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 1.076 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 26.577
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.361

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

CALIB					
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)=	71.6	
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.41			

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88

2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.268 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 27.231
TOTAL RAINFALL (mm)= 73.660

RUNOFF COEFFICIENT = 0.370

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

CALIB					
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)=	73.3	
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.70			

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88

2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.367 (i)
TIME TO PEAK (hrs)= 12.917
RUNOFF VOLUME (mm)= 29.429

TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.400

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0007):	12.02	0.367	12.92	29.43
	+ ID2= 2 (0008):	6.48	0.268	12.50	27.23
	ID = 3 (0001):	18.50	0.598	12.67	28.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0001):	18.50	0.598	12.67	28.66
	+ ID2= 2 (0101):	40.48	0.806	13.17	23.58
	ID = 3 (0003):	58.98	1.337	12.92	25.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0003):	58.98	1.337	12.92	25.17
	+ ID2= 2 (0102):	5.53	0.200	12.58	25.97
	ID = 1 (0003):	64.51	1.504	12.83	25.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0003):	64.51	1.504	12.83	25.24

+ ID2= 2 (0103):		65.15	1.076	13.67	26.58		
ID = 3 (0003):		129.66	2.354	13.08	25.91		

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:i.10yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\3eef6139
Ptotal= 85.89 mm	Comments: 10yr 24hr 15min SCS Type II (MTO)

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	1.55	12.50	12.37	18.75	1.55
0.25	0.94	6.50	1.55	12.75	6.36	19.00	1.55
0.50	0.94	6.75	1.55	13.00	6.36	19.25	1.55
0.75	0.94	7.00	1.55	13.25	4.64	19.50	1.55
1.00	0.94	7.25	1.89	13.50	4.64	19.75	1.55
1.25	0.94	7.50	1.89	13.75	3.61	20.00	1.55
1.50	0.94	7.75	1.89	14.00	3.61	20.25	1.03
1.75	0.94	8.00	1.89	14.25	2.58	20.50	1.03
2.00	0.94	8.25	2.23	14.50	2.58	20.75	1.03
2.25	1.12	8.50	2.23	14.75	2.58	21.00	1.03
2.50	1.12	8.75	2.40	15.00	2.58	21.25	1.03
2.75	1.12	9.00	2.40	15.25	2.58	21.50	1.03
3.00	1.12	9.25	2.75	15.50	2.58	21.75	1.03
3.25	1.12	9.50	2.75	15.75	2.58	22.00	1.03
3.50	1.12	9.75	3.09	16.00	2.58	22.25	1.03
3.75	1.12	10.00	3.09	16.25	1.55	22.50	1.03
4.00	1.12	10.25	3.95	16.50	1.55	22.75	1.03
4.25	1.37	10.50	3.95	16.75	1.55	23.00	1.03
4.50	1.37	10.75	5.33	17.00	1.55	23.25	1.03
4.75	1.37	11.00	5.33	17.25	1.55	23.50	1.03
5.00	1.37	11.25	8.25	17.50	1.55	23.75	1.03
5.25	1.37	11.50	8.25	17.75	1.55	24.00	1.03
5.50	1.37	11.75	25.42	18.00	1.55		
5.75	1.37	12.00	105.13	18.25	1.55		
6.00	1.37	12.25	12.37	18.50	1.55		

CALIB

NASHYD (0101)	Area (ha)= 40.48	Curve Number (CN)= 67.1
ID= 1 DT= 5.0 min	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.90	

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03

3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 1.069 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 30.963
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.360

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

CALIB			
NASHYD (0102)	Area (ha)= 5.53	Curve Number (CN)= 69.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.46		

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03

3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.263 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 33.814
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.394

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

CALIB			
NASHYD (0103)	Area (ha)= 65.15	Curve Number (CN)= 71.4	
ID= 1 DT= 5.0 min	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.37		

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03

3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 1.417 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 34.660
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.404

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

CALIB				
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)=	71.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.41		

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03

3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.352 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 35.384
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.412

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

CALIB				
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)=	73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.70		

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03

2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.476 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 37.925
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.442

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.476	12.83	37.93
+ ID2= 2 (0008):	6.48	0.352	12.50	35.38
ID = 3 (0001):	18.50	0.780	12.67	37.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.780	12.67	37.03
+ ID2= 2 (0101):	40.48	1.069	13.08	30.96
ID = 3 (0003):	58.98	1.761	12.92	32.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	1.761	12.92	32.87
+ ID2= 2 (0102):	5.53	0.263	12.58	33.81
ID = 1 (0003):	64.51	1.981	12.83	32.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	1.981	12.83	32.95
+ ID2= 2 (0103):	65.15	1.417	13.67	34.66
ID = 3 (0003):	129.66	3.104	13.08	33.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:j.25yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\adba8b39
Ptotal= 99.69 mm	Comments: 25yr 24hr 15min SCS Type II (MTO)

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	1.79	12.50	14.36	18.75	1.79
0.25	1.10	6.50	1.79	12.75	7.38	19.00	1.79
0.50	1.10	6.75	1.79	13.00	7.38	19.25	1.79
0.75	1.10	7.00	1.79	13.25	5.38	19.50	1.79
1.00	1.10	7.25	2.19	13.50	5.38	19.75	1.79
1.25	1.10	7.50	2.19	13.75	4.19	20.00	1.79
1.50	1.10	7.75	2.19	14.00	4.19	20.25	1.20
1.75	1.10	8.00	2.19	14.25	2.99	20.50	1.20
2.00	1.10	8.25	2.59	14.50	2.99	20.75	1.20
2.25	1.30	8.50	2.59	14.75	2.99	21.00	1.20
2.50	1.30	8.75	2.79	15.00	2.99	21.25	1.20
2.75	1.30	9.00	2.79	15.25	2.99	21.50	1.20
3.00	1.30	9.25	3.19	15.50	2.99	21.75	1.20
3.25	1.30	9.50	3.19	15.75	2.99	22.00	1.20
3.50	1.30	9.75	3.59	16.00	2.99	22.25	1.20
3.75	1.30	10.00	3.59	16.25	1.79	22.50	1.20
4.00	1.30	10.25	4.59	16.50	1.79	22.75	1.20
4.25	1.60	10.50	4.59	16.75	1.79	23.00	1.20
4.50	1.60	10.75	6.18	17.00	1.79	23.25	1.20
4.75	1.60	11.00	6.18	17.25	1.79	23.50	1.20
5.00	1.60	11.25	9.57	17.50	1.79	23.75	1.20
5.25	1.60	11.50	9.57	17.75	1.79	24.00	1.20
5.50	1.60	11.75	29.51	18.00	1.79		
5.75	1.60	12.00	122.02	18.25	1.79		
6.00	1.60	12.25	14.36	18.50	1.79		

CALIB NASHYD (0101) ID= 1 DT= 5.0 min	Area (ha)= 40.48 Curve Number (CN)= 67.1 Ia (mm)= 6.41 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.90

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20

3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 1.391 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 39.947
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.401

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

CALIB					
NASHYD (0102)	Area	(ha)=	5.53	Curve Number	(CN)= 69.6
ID= 1 DT= 5.0 min	Ia	(mm)=	5.44	# of Linear Res.(N)=	3.00

U.H. Tp(hrs)= 0.46

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20

3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.339 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 43.288
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.434

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

CALIB					
NASHYD (0103)	Area	(ha)=	65.15	Curve Number	(CN)= 71.4

ID= 1 DT= 5.0 min	Ia	(mm)=	6.70	# of Linear Res.(N)=	3.00

U.H. Tp(hrs)= 1.37

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20

3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 1.829 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 44.405
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.445

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

CALIB

NASHYD (0008)	Area (ha)= 6.48	Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41	

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20

3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.453 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 45.198
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.453

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

CALIB			
NASHYD (0007)	Area (ha)= 12.02	Curve Number (CN)= 73.3	
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.70		

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20

3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.608 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 48.097
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.482

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.608	12.83	48.10
+ ID2= 2 (0008):	6.48	0.453	12.50	45.20
ID = 3 (0001):	18.50	1.000	12.67	47.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	1.000	12.67	47.08
+ ID2= 2 (0101):	40.48	1.391	13.08	39.95
ID = 3 (0003):	58.98	2.276	12.92	42.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	2.276	12.92	42.18
+ ID2= 2 (0102):	5.53	0.339	12.58	43.29
ID = 1 (0003):	64.51	2.561	12.83	42.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	2.561	12.83	42.28
+ ID2= 2 (0103):	65.15	1.829	13.67	44.41
ID = 3 (0003):	129.66	4.016	13.08	43.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:k.50yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\8a0c4eea
Ptotal=112.18 mm	Comments: 50yr 24hr 15min SCS Type II (MTO)

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	2.02	12.50	16.15	18.75	2.02
0.25	1.23	6.50	2.02	12.75	8.30	19.00	2.02
0.50	1.23	6.75	2.02	13.00	8.30	19.25	2.02
0.75	1.23	7.00	2.02	13.25	6.06	19.50	2.02
1.00	1.23	7.25	2.47	13.50	6.06	19.75	2.02
1.25	1.23	7.50	2.47	13.75	4.71	20.00	2.02
1.50	1.23	7.75	2.47	14.00	4.71	20.25	1.35
1.75	1.23	8.00	2.47	14.25	3.37	20.50	1.35
2.00	1.23	8.25	2.92	14.50	3.37	20.75	1.35
2.25	1.46	8.50	2.92	14.75	3.37	21.00	1.35
2.50	1.46	8.75	3.14	15.00	3.37	21.25	1.35
2.75	1.46	9.00	3.14	15.25	3.37	21.50	1.35
3.00	1.46	9.25	3.59	15.50	3.37	21.75	1.35
3.25	1.46	9.50	3.59	15.75	3.37	22.00	1.35
3.50	1.46	9.75	4.04	16.00	3.37	22.25	1.35
3.75	1.46	10.00	4.04	16.25	2.02	22.50	1.35
4.00	1.46	10.25	5.16	16.50	2.02	22.75	1.35
4.25	1.79	10.50	5.16	16.75	2.02	23.00	1.35
4.50	1.79	10.75	6.96	17.00	2.02	23.25	1.35
4.75	1.79	11.00	6.96	17.25	2.02	23.50	1.35
5.00	1.79	11.25	10.77	17.50	2.02	23.75	1.35
5.25	1.79	11.50	10.77	17.75	2.02	24.00	1.35
5.50	1.79	11.75	33.21	18.00	2.02		
5.75	1.79	12.00	137.31	18.25	2.02		
6.00	1.79	12.25	16.15	18.50	2.02		

CALIB			
NASHYD (0101)	Area (ha)= 40.48	Curve Number (CN)= 67.1	
ID= 1 DT= 5.0 min	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.90		

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35

3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 1.702 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 48.575
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.433

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

CALIB					
NASHYD (0102)	Area	(ha)=	5.53	Curve Number (CN)=	69.6
ID= 1 DT= 5.0 min	Ia	(mm)=	5.44	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.46		

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35

3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.412 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 52.336
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.467

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

CALIB					
NASHYD (0103)	Area	(ha)=	65.15	Curve Number (CN)=	71.4
ID= 1 DT= 5.0 min	Ia	(mm)=	6.70	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		1.37		

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35

3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 2.223 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 53.691
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.479

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

CALIB					
NASHYD (0008)	Area	(ha)=	6.48	Curve Number	(CN)= 71.6
ID= 1 DT= 5.0 min	Ia	(mm)=	5.92	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.41		

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35

3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.550 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 54.538
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.486

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

CALIB					
NASHYD (0007)	Area	(ha)=	12.02	Curve Number	(CN)= 73.3
ID= 1 DT= 5.0 min	Ia	(mm)=	4.73	# of Linear Res.	(N)= 3.00

U.H. Tp(hrs)= 0.70

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35

3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.733 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 57.735
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.515

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

ADD HYD (0001)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.733	12.83	57.73
+ ID2= 2 (0008):	6.48	0.550	12.50	54.54
ID = 3 (0001):	18.50	1.210	12.67	56.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)	

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	1.210	12.67	56.62
+ ID2= 2 (0101):	40.48	1.702	13.08	48.57
ID = 3 (0003):	58.98	2.770	12.92	51.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)	

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	2.770	12.92	51.10
+ ID2= 2 (0102):	5.53	0.412	12.58	52.34
ID = 1 (0003):	64.51	3.118	12.83	51.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)	

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	3.118	12.83	51.20
+ ID2= 2 (0103):	65.15	2.223	13.67	53.69
ID = 3 (0003):	129.66	4.890	13.08	52.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:1.100yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\288d49b6
Ptotal=123.37 mm	Comments: 100yr 24hr 15min SCS Type II (MTO)

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	2.22	12.50	17.77	18.75	2.22
0.25	1.36	6.50	2.22	12.75	9.13	19.00	2.22
0.50	1.36	6.75	2.22	13.00	9.13	19.25	2.22
0.75	1.36	7.00	2.22	13.25	6.66	19.50	2.22
1.00	1.36	7.25	2.71	13.50	6.66	19.75	2.22
1.25	1.36	7.50	2.71	13.75	5.18	20.00	2.22
1.50	1.36	7.75	2.71	14.00	5.18	20.25	1.48
1.75	1.36	8.00	2.71	14.25	3.70	20.50	1.48
2.00	1.36	8.25	3.21	14.50	3.70	20.75	1.48
2.25	1.60	8.50	3.21	14.75	3.70	21.00	1.48
2.50	1.60	8.75	3.45	15.00	3.70	21.25	1.48
2.75	1.60	9.00	3.45	15.25	3.70	21.50	1.48
3.00	1.60	9.25	3.95	15.50	3.70	21.75	1.48
3.25	1.60	9.50	3.95	15.75	3.70	22.00	1.48
3.50	1.60	9.75	4.44	16.00	3.70	22.25	1.48
3.75	1.60	10.00	4.44	16.25	2.22	22.50	1.48
4.00	1.60	10.25	5.68	16.50	2.22	22.75	1.48
4.25	1.97	10.50	5.68	16.75	2.22	23.00	1.48
4.50	1.97	10.75	7.65	17.00	2.22	23.25	1.48
4.75	1.97	11.00	7.65	17.25	2.22	23.50	1.48
5.00	1.97	11.25	11.84	17.50	2.22	23.75	1.48
5.25	1.97	11.50	11.84	17.75	2.22	24.00	1.48
5.50	1.97	11.75	36.52	18.00	2.22		
5.75	1.97	12.00	151.00	18.25	2.22		
6.00	1.97	12.25	17.77	18.50	2.22		

CALIB	
NASHYD (0101)| ID= 1 DT= 5.0 min	Area (ha)= 40.48 Curve Number (CN)= 67.1 Ia (mm)= 6.41 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.90

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

---- TRANSFORMED HYETOGRAPH ----

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48

4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 1.993 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 56.644
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.459

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

CALIB					
NASHYD (0102)	Area	(ha)=	5.53	Curve Number	(CN)= 69.6
ID= 1 DT= 5.0 min	Ia	(mm)=	5.44	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.46		

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48

3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.481 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 60.761
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.493

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

CALIB					
NASHYD (0103)	Area	(ha)=	65.15	Curve Number	(CN)= 71.4
ID= 1 DT= 5.0 min	Ia	(mm)=	6.70	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		1.37		

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48

3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 2.590 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 62.322
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.505

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

CALIB			
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48

3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.640 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 63.213
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.512

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

CALIB			
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48

3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.849 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 66.656
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.540

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0007):	12.02	0.849	12.83	66.66

2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 3.533 (i)
TIME TO PEAK (hrs)= 11.083
RUNOFF VOLUME (mm)= 128.032
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.604

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

CALIB					
NASHYD (0102)	Area (ha)=	5.53	Curve Number (CN)=	69.6	
ID= 1 DT= 5.0 min	Ia (mm)=	5.44	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.46			

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

---- TRANSFORMED HYETOGRAPH ----

0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00

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

+ ID2= 2 (0008): 6.48 0.640 12.50 63.21
ID = 3 (0001): 18.50 1.405 12.67 65.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	1.405	12.67	65.45
+ ID2= 2 (0101):	40.48	1.993	13.08	56.64
ID = 3 (0003):	58.98	3.233	12.92	59.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0003):	58.98	3.233	12.92	59.41
+ ID2= 2 (0102):	5.53	0.481	12.58	60.76
ID = 1 (0003):	64.51	3.638	12.83	59.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0003):	64.51	3.638	12.83	59.52
+ ID2= 2 (0103):	65.15	2.590	13.67	62.32
ID = 3 (0003):	129.66	5.707	13.08	60.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:m.Hazel **
****

READ STORM	Filename: C:\Users\bhummelen\AppD

	ata\Local\Temp\	
	25472f99-4987-4120-b36f-50a4c03e6c57\4be3aa78	
Ptotal=212.00 mm	Comments: Hazel	

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.00	6.00	3.00	13.00	6.00	23.00	9.00	53.00
1.00	4.00	4.00	17.00	7.00	13.00	10.00	38.00
2.00	6.00	5.00	13.00	8.00	13.00	11.00	13.00

CALIB					
NASHYD (0101)	Area (ha)=	40.48	Curve Number (CN)=	67.1	
ID= 1 DT= 5.0 min	Ia (mm)=	6.41	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.90			

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

---- TRANSFORMED HYETOGRAPH ----

0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00

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

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.584 (i)
TIME TO PEAK (hrs)= 10.250
RUNOFF VOLUME (mm)= 134.374
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.634

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

CALIB					
NASHYD (0103)	Area (ha)=	65.15	Curve Number (CN)=	71.4	
ID= 1 DT= 5.0 min	Ia (mm)=	6.70	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.37			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 5.149 (i)
TIME TO PEAK (hrs)= 11.500
RUNOFF VOLUME (mm)= 137.271
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.648

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

CALIB					
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)=	71.6	
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.41			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.721 (i)
TIME TO PEAK (hrs)= 10.167
RUNOFF VOLUME (mm)= 138.397
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.653

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

CALIB					
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)=	73.3	
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.70			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00

2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 1.198 (i)
TIME TO PEAK (hrs)= 10.750
RUNOFF VOLUME (mm)= 143.301
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.676

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		12.02	1.198	10.75	143.30
+ ID2= 2 (0008):		6.48	0.721	10.17	138.40
ID = 3 (0001):		18.50	1.859	10.42	141.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	1.859	10.42	141.58
+ ID2= 2 (0101):		40.48	3.533	11.08	128.03
ID = 3 (0003):		58.98	5.318	11.00	132.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0003):		58.98	5.318	11.00	132.28
+ ID2= 2 (0102):		5.53	0.584	10.25	134.37
ID = 1 (0003):		64.51	5.836	11.00	132.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0003):		64.51	5.836	11.00	132.46
+ ID2= 2 (0103):		65.15	5.149	11.50	137.27
ID = 3 (0003):		129.66	10.753	11.17	134.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:n.tim **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\cccc62da
Ptotal=193.00 mm	Comments: tim

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	15.00	3.00	3.00	6.00	43.00	9.00	13.00
1.00	20.00	4.00	5.00	7.00	20.00	10.00	13.00
2.00	10.00	5.00	20.00	8.00	23.00	11.00	8.00

CALIB			
NASHYD (0101)	Area (ha)=	40.48	Curve Number (CN)= 67.1
ID= 1 DT= 5.0 min	Ia (mm)=	6.41	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.90	

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 2.269 (i)
TIME TO PEAK (hrs)= 7.667
RUNOFF VOLUME (mm)= 111.901

TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.580

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

CALIB			
NASHYD (0102)	Area (ha)=	5.53	Curve Number (CN)= 69.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.44	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.46	

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00

2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.418 (i)
TIME TO PEAK (hrs)= 7.167
RUNOFF VOLUME (mm)= 117.842
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.611

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

CALIB					
NASHYD (0103)	Area (ha)=	65.15	Curve Number (CN)=	71.4	
ID= 1 DT= 5.0 min	Ia (mm)=	6.70	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.37			

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00

1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 3.392 (i)
TIME TO PEAK (hrs)= 9.083
RUNOFF VOLUME (mm)= 120.495
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.624

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

CALIB					
NASHYD (0008)	Area (ha)=	6.48	Curve Number (CN)=	71.6	
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.41			

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00

0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.523 (i)
TIME TO PEAK (hrs)= 7.083
RUNOFF VOLUME (mm)= 121.582
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.630

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

CALIB					
NASHYD (0007)	Area (ha)=	12.02	Curve Number (CN)=	73.3	
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.70			

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.845 (i)
TIME TO PEAK (hrs)= 7.333
RUNOFF VOLUME (mm)= 126.233

TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.654

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		12.02	0.845	7.33	126.23
+ ID2= 2 (0008):		6.48	0.523	7.08	121.58
ID = 3 (0001):		18.50	1.338	7.25	124.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	1.338	7.25	124.60
+ ID2= 2 (0101):		40.48	2.269	7.67	111.90
ID = 3 (0003):		58.98	3.512	7.42	115.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0003):		58.98	3.512	7.42	115.89
+ ID2= 2 (0102):		5.53	0.418	7.17	117.84
ID = 1 (0003):		64.51	3.891	7.42	116.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0003):		64.51	3.891	7.42	116.05

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
+ ID2= 2 (0103):		65.15	3.392	9.08	120.49
ID = 3 (0003):		129.66	6.800	7.75	118.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:p.25mm **
****

READ STORM	Filename: C:\Users\bhummelen\AppData\Local\Temp\25472f99-4987-4120-b36f-50a4c03e6c57\a5e62b46
Ptotal= 26.26 mm	Comments: 25mm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.10	0.83	30.00	1.67	4.67	2.50	2.37
0.08	2.29	0.92	80.70	1.75	4.23	2.58	2.26
0.17	2.52	1.00	37.00	1.83	3.88	2.67	2.17
0.25	2.81	1.08	20.30	1.92	3.58	2.75	2.08
0.33	3.18	1.17	13.27	2.00	3.33	2.83	2.00
0.42	3.68	1.25	10.09	2.08	3.11	2.92	1.93
0.50	4.39	1.33	8.15	2.17	2.92	3.00	1.93
0.58	5.49	1.42	6.85	2.25	2.76	3.08	1.93
0.67	7.40	1.50	5.92	2.33	2.61	3.17	1.93
0.75	11.54	1.58	5.22	2.42	2.48		

CALIB NASHYD (0101) ID= 1 DT= 5.0 min	Area (ha)= 40.48	Curve Number (CN)= 67.1
	Ia (mm)= 6.41	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.90	

Unit Hyd Qpeak (cms)= 1.718

PEAK FLOW (cms)= 0.124 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 2.728
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.104

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

CALIB NASHYD (0102) ID= 1 DT= 5.0 min	Area (ha)= 5.53	Curve Number (CN)= 69.6
	Ia (mm)= 5.44	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.46	

Unit Hyd Qpeak (cms)= 0.459

PEAK FLOW (cms)= 0.031 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 3.288
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.125

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

CALIB NASHYD (0103) ID= 1 DT= 5.0 min	Area (ha)= 65.15	Curve Number (CN)= 71.4
	Ia (mm)= 6.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.37	

Unit Hyd Qpeak (cms)= 1.816

PEAK FLOW (cms)= 0.177 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 3.153
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.120

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

CALIB NASHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 6.48	Curve Number (CN)= 71.6
	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41	

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.040 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 3.415
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.130

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

CALIB NASHYD (0007) ID= 1 DT= 5.0 min	Area (ha)= 12.02	Curve Number (CN)= 73.3
	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70	

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.066 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 4.063
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.155

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

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0007):		12.02	0.066	2.00	4.06
+ ID2= 2 (0008):		6.48	0.040	1.58	3.41
ID = 3 (0001):		18.50	0.101	1.83	3.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	0.101	1.83	3.84
+ ID2= 2 (0101):		40.48	0.124	2.33	2.73
ID = 3 (0003):		58.98	0.214	2.08	3.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1					

Pre-Development

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0003):	58.98	0.214	2.08	3.08
+ ID2= 2 (0102):	5.53	0.031	1.67	3.29
ID = 1 (0003):	64.51	0.239	2.00	3.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0003):	64.51	0.239	2.00	3.09
+ ID2= 2 (0103):	65.15	0.177	3.08	3.15
ID = 3 (0003):	129.66	0.379	2.42	3.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

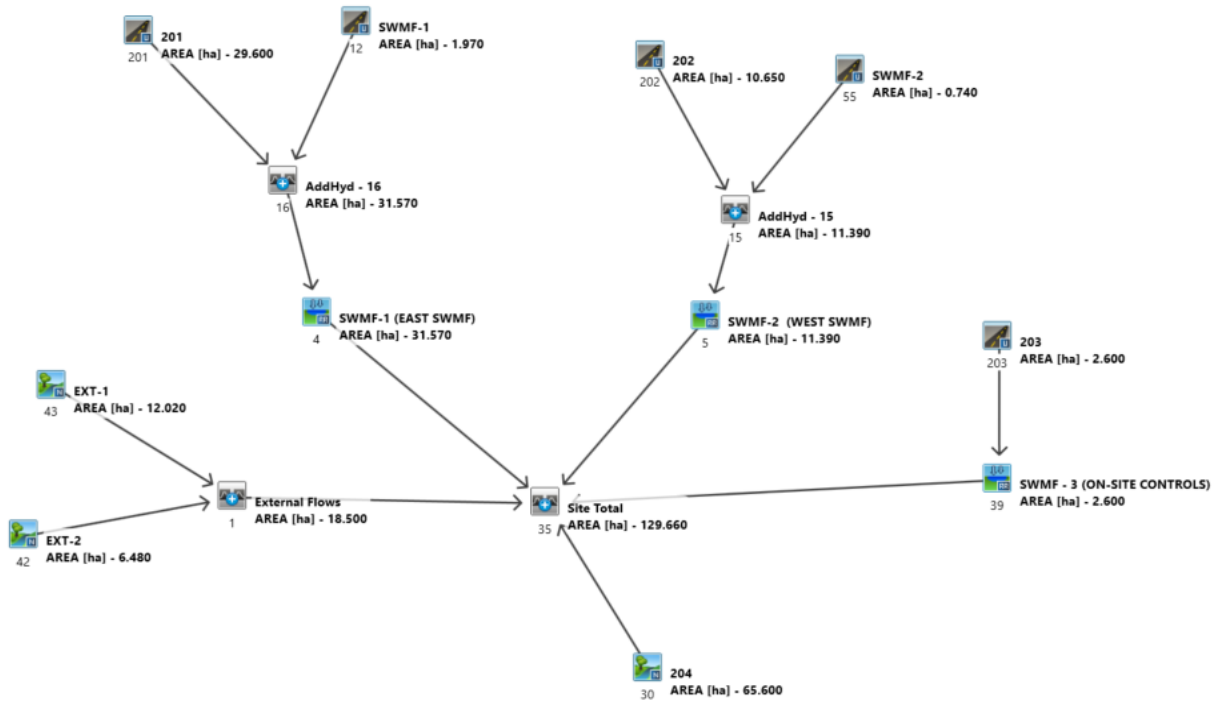
APPENDIX B2
Visual OTTHYMO
Post-Development Model

CROZIER & ASSOCIATES
Consulting Engineers

Project: Hawk Ridge
Project No.: 1935-6133
File: Model Schematic
Design by: HB
Date: 2024.09.30

Visual OTTHYMO 6.1 - Model Schematic

Post-Development



```
****************************************
** SIMULATION:a.2yr 4hr 10min Chicago **
****************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 372.655
| Ptotal= 32.32 mm |                          B=   0.000
--------------------                          C=   0.699
                       used in:   INTENSITY =  A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.72	1.00	12.86	2.00	5.37	3.00	3.13
0.17	3.04	1.17	74.53	2.17	4.75	3.17	2.95
0.33	3.47	1.33	15.78	2.33	4.27	3.33	2.79
0.50	4.08	1.50	9.95	2.50	3.90	3.50	2.65
0.67	5.05	1.67	7.59	2.67	3.59	3.67	2.53
0.83	6.91	1.83	6.25	2.83	3.34	3.83	2.42

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--------------------
| CALIB            |
| NASHYD   (  0030)|   Area    (ha)=  65.60   Curve Number   (CN)= 71.8
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.51   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.68

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42


```
    Unit Hyd Qpeak  (cms)=   1.491

    PEAK FLOW       (cms)=   0.241 (i)
    TIME TO PEAK    (hrs)=   4.000
    RUNOFF VOLUME    (mm)=   5.304
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.164

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0042)|   Area    (ha)=   6.48   Curve Number   (CN)= 71.6
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.92   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.41

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

```
    Unit Hyd Qpeak  (cms)=   0.604

    PEAK FLOW       (cms)=   0.055 (i)
    TIME TO PEAK    (hrs)=   1.833
    RUNOFF VOLUME    (mm)=   5.480
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.170

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

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| CALIB            |
| NASHYD   (  0043)|   Area    (ha)=  12.02   Curve Number   (CN)= 73.3
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.73   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.70

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

```
    Unit Hyd Qpeak  (cms)=   0.656

    PEAK FLOW       (cms)=   0.089 (i)
    TIME TO PEAK    (hrs)=   2.250
    RUNOFF VOLUME    (mm)=   6.336
    TOTAL RAINFALL   (mm)=  32.318
    RUNOFF COEFFICIENT   =   0.196

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

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0042):     6.48   0.055     1.83     5.48
      + ID2= 2 (  0043):    12.02   0.089     2.25     6.34
        ================================================
        ID = 3 (  0001):    18.50   0.136     2.08     6.04

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  29.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  45.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

Max.Eff.Inten.(mm/hr)=		74.53	19.24	
over (min)		10.00	25.00	
Storage Coeff. (min)=		8.66 (ii)	22.30 (ii)	
Unit Hyd. Tpeak (min)=		10.00	25.00	
Unit Hyd. peak (cms)=		0.12	0.05	
				TOTALS
PEAK FLOW	(cms)=	1.76	0.26	1.869 (iii)
TIME TO PEAK	(hrs)=	1.42	1.67	1.42
RUNOFF VOLUME	(mm)=	31.32	8.34	18.68
TOTAL RAINFALL	(mm)=	32.32	32.32	32.32
RUNOFF COEFFICIENT	=	0.97	0.26	0.58

```
  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
        CN*  =  69.0    Ia = Dep. Storage  (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
      THAN THE STORAGE COEFFICIENT.
```

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

CALIB					
STANDHYD (0012)	Area (ha)= 1.97				
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.99	0.99
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	114.60	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

			TOTALS
Max.Eff.Inten.(mm/hr)=	74.53	5.39	
over (min)	5.00	30.00	
Storage Coeff. (min)=	3.84 (ii)	26.54 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.25	0.04	
PEAK FLOW (cms)=	0.19	0.01	0.193 (iii)
TIME TO PEAK (hrs)=	1.33	1.75	1.33
RUNOFF VOLUME (mm)=	31.32	5.28	18.29
TOTAL RAINFALL (mm)=	32.32	32.32	32.32
RUNOFF COEFFICIENT =	0.97	0.16	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	1.97	0.193	1.33	18.29
+ ID2= 2 (0201):	29.60	1.869	1.42	18.68
ID = 3 (0016):	31.57	1.955	1.42	18.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	1.955	1.42	18.66
OUTFLOW: ID= 1 (0004)	31.570	0.053	4.33	18.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.69
TIME SHIFT OF PEAK FLOW (min)=175.00
MAXIMUM STORAGE USED (ha.m.)= 0.5315

CALIB					
STANDHYD (0202)	Area (ha)= 10.65				
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	6.92	3.73
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	266.46	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

			TOTALS
Max.Eff.Inten.(mm/hr)=	74.53	26.92	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.37 (ii)	18.30 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
PEAK FLOW (cms)=	0.82	0.15	0.867 (iii)
TIME TO PEAK (hrs)=	1.33	1.58	1.33
RUNOFF VOLUME (mm)=	31.32	11.17	20.24
TOTAL RAINFALL (mm)=	32.32	32.32	32.32
RUNOFF COEFFICIENT =	0.97	0.35	0.63

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74				
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.37	0.37
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	70.24	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

			TOTALS
Max.Eff.Inten.(mm/hr)=	74.53	5.61	
over (min)	5.00	30.00	
Storage Coeff. (min)=	2.86 (ii)	25.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.28	0.04	
PEAK FLOW (cms)=	0.07	0.00	0.075 (iii)
TIME TO PEAK (hrs)=	1.33	1.75	1.33
RUNOFF VOLUME (mm)=	31.32	5.48	18.38
TOTAL RAINFALL (mm)=	32.32	32.32	32.32
RUNOFF COEFFICIENT =	0.97	0.17	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	0.867	1.33	20.24
+ ID2= 2 (0055):		0.74	0.075	1.33	18.38
ID = 3 (0015):		11.39	0.942	1.33	20.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	0.942	1.33	20.12
OUTFLOW: ID= 1 (0005)	11.390	0.034	4.17	20.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.61
TIME SHIFT OF PEAK FLOW (min)=170.00
MAXIMUM STORAGE USED (ha.m.)= 0.2013

CALIB				
STANDHYD (0203)	Area (ha)=	2.60		
ID= 1 DT= 5.0 min	Total Imp(%)=	75.00	Dir. Conn.(%)=	55.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.72	1.083	12.86	2.083	5.37	3.08	3.13
0.167	2.72	1.167	12.86	2.167	5.37	3.17	3.13
0.250	3.04	1.250	74.53	2.250	4.75	3.25	2.95
0.333	3.04	1.333	74.53	2.333	4.75	3.33	2.95
0.417	3.47	1.417	15.78	2.417	4.27	3.42	2.79
0.500	3.47	1.500	15.78	2.500	4.27	3.50	2.79
0.583	4.08	1.583	9.95	2.583	3.90	3.58	2.65
0.667	4.08	1.667	9.95	2.667	3.90	3.67	2.65
0.750	5.05	1.750	7.59	2.750	3.59	3.75	2.53
0.833	5.05	1.833	7.59	2.833	3.59	3.83	2.53
0.917	6.91	1.917	6.25	2.917	3.34	3.92	2.42
1.000	6.91	2.000	6.25	3.000	3.34	4.00	2.42

Max.Eff.Inten.(mm/hr)=		74.53	30.16	
over (min)		5.00	15.00	
Storage Coeff. (min)=		2.75 (ii)	14.15 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.28	0.08	
				TOTALS
PEAK FLOW	(cms)=	0.29	0.04	0.307 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	31.32	10.78	22.07
TOTAL RAINFALL	(mm)=	32.32	32.32	32.32
RUNOFF COEFFICIENT	=	0.97	0.33	0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF

IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.307	1.33	22.07
OUTFLOW: ID= 1 (0039)	2.600	0.011	4.00	21.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.47
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.0474

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		18.50	0.136	2.08	6.04
+ ID2= 2 (0030):		65.60	0.241	4.00	5.30
ID = 3 (0035):		84.10	0.310	3.50	5.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0035):		84.10	0.310	3.50	5.47
+ ID2= 2 (0039):		2.60	0.011	4.00	21.64
ID = 1 (0035):		86.70	0.320	3.50	5.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0035):		86.70	0.320	3.50	5.95
+ ID2= 2 (0004):		31.57	0.053	4.33	18.59
ID = 3 (0035):		118.27	0.371	3.58	9.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0035):		118.27	0.371	3.58	9.32
+ ID2= 2 (0005):		11.39	0.034	4.17	20.03
ID = 1 (0035):		129.66	0.402	3.75	10.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:b.5yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters:	A= 495.124
Ptotal= 42.94 mm		B= 0.000
		C= 0.699

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

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.61	1.00	17.09	2.00	7.14	3.00	4.16
0.17	4.03	1.17	99.02	2.17	6.30	3.17	3.92
0.33	4.60	1.33	20.97	2.33	5.67	3.33	3.71
0.50	5.42	1.50	13.22	2.50	5.18	3.50	3.52
0.67	6.72	1.67	10.08	2.67	4.78	3.67	3.36
0.83	9.19	1.83	8.30	2.83	4.44	3.83	3.21

CALIB				
NASHYD (0030)	Area (ha)=	65.60	Curve Number (CN)=	71.8
ID= 1 DT= 5.0 min	Ia (mm)=	6.51	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.68		

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 0.444 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 9.744
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.227

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

CALIB			
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41	

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36

0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.106 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 9.946
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.232

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

CALIB			
NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70	

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	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.161 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 11.167
TOTAL RAINFALL (mm)= 42.939
RUNOFF COEFFICIENT = 0.260

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.106	1.83	9.95
+ ID2= 2 (0043):	12.02	0.161	2.25	11.17
ID = 3 (0001):	18.50	0.252	2.00	10.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD (0201)	Area (ha)= 29.60	
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Max.Eff.Inten.(mm/hr)=	99.02	43.97	
over (min)	10.00	20.00	

Storage Coeff. (min)=	7.73 (ii)	17.53 (ii)	
Unit Hyd. Tpeak (min)=	10.00	20.00	
Unit Hyd. peak (cms)=	0.13	0.06	
			TOTALS
PEAK FLOW (cms)=	2.42	0.53	2.736 (iii)
TIME TO PEAK (hrs)=	1.42	1.58	1.42
RUNOFF VOLUME (mm)=	41.94	14.07	26.61
TOTAL RAINFALL (mm)=	42.94	42.94	42.94
RUNOFF COEFFICIENT =	0.98	0.33	0.62

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)= 1.97		
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Max.Eff.Inten.(mm/hr)=	99.02	11.68		
over (min)	5.00	25.00		
Storage Coeff. (min)=	3.43 (ii)	20.09 (ii)		
Unit Hyd. Tpeak (min)=	5.00	25.00		
Unit Hyd. peak (cms)=	0.26	0.05		
			TOTALS	
PEAK FLOW (cms)=	0.26	0.02	0.263 (iii)	
TIME TO PEAK (hrs)=	1.33	1.67	1.33	
RUNOFF VOLUME (mm)=	41.94	9.47	25.70	
TOTAL RAINFALL (mm)=	42.94	42.94	42.94	
RUNOFF COEFFICIENT =	0.98	0.22	0.60	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0012):	1.97	0.263	1.33	25.70
	+ ID2= 2 (0201):	29.60	2.736	1.42	26.61
	ID = 3 (0016):	31.57	2.848	1.42	26.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600

0.2950 0.9000 | 0.0000 0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	2.848	1.42	26.55
OUTFLOW: ID= 1 (0004)	31.570	0.129	4.17	26.48

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.51
TIME SHIFT OF PEAK FLOW (min)=165.00
MAXIMUM STORAGE USED (ha.m.)= 0.7453

CALIB			
STANDHYD (0202)	Area (ha)= 10.65		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	6.92	3.73	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	266.46	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Max.Eff.Inten.(mm/hr)=	99.02	60.08
over (min)	5.00	15.00
Storage Coeff. (min)=	5.69 (ii)	14.34 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.20	0.08

			TOTALS	
PEAK FLOW (cms)=	1.13	0.30	1.277 (iii)	
TIME TO PEAK (hrs)=	1.33	1.50	1.33	
RUNOFF VOLUME (mm)=	41.94	18.25	28.91	
TOTAL RAINFALL (mm)=	42.94	42.94	42.94	
RUNOFF COEFFICIENT =	0.98	0.43	0.67	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74		
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.37	0.37	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	70.24	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Max.Eff.Inten.(mm/hr)=	99.02	12.14
over (min)	5.00	20.00

Storage Coeff. (min)=	2.55 (ii)	18.96 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.29	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.10	0.01	0.102 (iii)	
TIME TO PEAK (hrs)=	1.33	1.58	1.33	
RUNOFF VOLUME (mm)=	41.94	9.80	25.86	
TOTAL RAINFALL (mm)=	42.94	42.94	42.94	
RUNOFF COEFFICIENT =	0.98	0.23	0.60	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	10.65	1.277	1.33	28.91
	+ ID2= 2 (0055):	0.74	0.102	1.33	25.86
	ID = 3 (0015):	11.39	1.379	1.33	28.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0015)	11.390	1.379	1.33	28.71
OUTFLOW: ID= 1 (0005)	11.390	0.096	3.67	28.63

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.95
TIME SHIFT OF PEAK FLOW (min)=140.00
MAXIMUM STORAGE USED (ha.m.)= 0.2526

CALIB			
STANDHYD (0203)	Area (ha)= 2.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 55.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.95	0.65
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	131.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.61	1.083	17.09	2.083	7.14	3.08	4.16
0.167	3.61	1.167	17.09	2.167	7.14	3.17	4.16
0.250	4.03	1.250	99.02	2.250	6.30	3.25	3.92
0.333	4.03	1.333	99.02	2.333	6.30	3.33	3.92
0.417	4.60	1.417	20.97	2.417	5.67	3.42	3.71
0.500	4.60	1.500	20.97	2.500	5.67	3.50	3.71
0.583	5.42	1.583	13.22	2.583	5.18	3.58	3.52
0.667	5.42	1.667	13.22	2.667	5.18	3.67	3.52
0.750	6.72	1.750	10.08	2.750	4.78	3.75	3.36
0.833	6.72	1.833	10.08	2.833	4.78	3.83	3.36
0.917	9.19	1.917	8.30	2.917	4.44	3.92	3.21
1.000	9.19	2.000	8.30	3.000	4.44	4.00	3.21

Max.Eff.Inten.(mm/hr)=	99.02	65.05	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.46 (ii)	10.84 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.09	
			TOTALS
PEAK FLOW (cms)=	0.39	0.07	0.423 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33

RUNOFF VOLUME (mm)=	41.94	17.28	30.84	
TOTAL RAINFALL (mm)=	42.94	42.94	42.94	
RUNOFF COEFFICIENT =	0.98	0.40	0.72	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.423	1.33	30.84
OUTFLOW: ID= 1 (0039)	2.600	0.015	4.00	30.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.52
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.0663

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	18.50	0.252	2.00	10.74
+ ID2= 2 (0030):	65.60	0.444	3.83	9.74
ID = 3 (0035):	84.10	0.567	3.33	9.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0035):	84.10	0.567	3.33	9.96

+ ID2= 2 (0039):	2.60	0.015	4.00	30.41
ID = 1 (0035):	86.70	0.581	3.33	10.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0035):	86.70	0.581	3.33	10.58
+ ID2= 2 (0004):	31.57	0.129	4.17	26.48
ID = 3 (0035):	118.27	0.689	3.83	14.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0035):	118.27	0.689	3.83	14.82
+ ID2= 2 (0005):	11.39	0.096	3.67	28.63
ID = 1 (0035):	129.66	0.785	3.75	16.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:c.10yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters: A= 577.353
Ptotal= 50.07 mm	B= 0.000
	C= 0.699
	used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.21	1.00	19.92	2.00	8.32	3.00	4.85
0.17	4.70	1.17	115.46	2.17	7.35	3.17	4.57
0.33	5.37	1.33	24.45	2.33	6.62	3.33	4.32

0.50	6.32	1.50	15.42	2.50	6.04	3.50	4.11
0.67	7.83	1.67	11.76	2.67	5.57	3.67	3.91
0.83	10.71	1.83	9.68	2.83	5.18	3.83	3.74

CALIB			
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8	
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW	(cms)=	0.605 (i)
TIME TO PEAK	(hrs)=	3.750
RUNOFF VOLUME	(mm)=	13.239
TOTAL RAINFALL	(mm)=	50.070
RUNOFF COEFFICIENT	=	0.264

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

CALIB			
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.41		

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.147 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 13.450
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.269

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

CALIB	
NASHYD (0043)	Area (ha)= 12.02 Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)= 4.73 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70

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	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32

0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.219 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 14.911
TOTAL RAINFALL (mm)= 50.070
RUNOFF COEFFICIENT = 0.298

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

ADD HYD (0001)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0042):	6.48	0.147	1.83	13.45
	+ ID2= 2 (0043):	12.02	0.219	2.25	14.91
	ID = 3 (0001):	18.50	0.345	2.00	14.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0201)	Area (ha)= 29.60
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

				TOTALS
Max.Eff.Inten.(mm/hr)=		115.46	58.95	
	over (min)	5.00	20.00	
Storage Coeff. (min)=		7.26 (ii)	15.98 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.17	0.07	
PEAK FLOW	(cms)=	3.36	0.75	3.627 (iii)
TIME TO PEAK	(hrs)=	1.33	1.58	1.33
RUNOFF VOLUME	(mm)=	49.07	18.40	32.20
TOTAL RAINFALL	(mm)=	50.07	50.07	50.07
RUNOFF COEFFICIENT	=	0.98	0.37	0.64

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

				TOTALS
Max.Eff.Inten.(mm/hr)=		115.46	18.68	
	over (min)	5.00	20.00	
Storage Coeff. (min)=		3.22 (ii)	17.03 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.27	0.06	
PEAK FLOW	(cms)=	0.30	0.03	0.313 (iii)
TIME TO PEAK	(hrs)=	1.33	1.58	1.33
RUNOFF VOLUME	(mm)=	49.07	12.76	30.91
TOTAL RAINFALL	(mm)=	50.07	50.07	50.07
RUNOFF COEFFICIENT	=	0.98	0.25	0.62

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0012):	1.97	0.313	1.33	30.91
	+ ID2= 2 (0201):	29.60	3.627	1.33	32.20
	ID = 3 (0016):	31.57	3.940	1.33	32.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004) / IN= 2---> OUT= 1 / DT= 5.0 min	OVERFLOW IS OFF			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	3.940	1.33	32.12
OUTFLOW: ID= 1 (0004)	31.570	0.233	4.00	32.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.90
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.8477

CALIB / STANDHYD (0202) / ID= 1 DT= 5.0 min	Area (ha)= 10.65	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57

0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Max.Eff.Inten.(mm/hr)=	115.46	79.16		
over (min)	5.00	15.00		
Storage Coeff. (min)=	5.35 (ii)	13.10 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.21	0.08		
			TOTALS	
PEAK FLOW (cms)=	1.34	0.42	1.551 (iii)	
TIME TO PEAK (hrs)=	1.33	1.50	1.33	
RUNOFF VOLUME (mm)=	49.07	23.45	34.98	
TOTAL RAINFALL (mm)=	50.07	50.07	50.07	
RUNOFF COEFFICIENT =	0.98	0.47	0.70	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055) / ID= 1 DT= 5.0 min	Area (ha)= 0.74	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32
0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Max.Eff.Inten.(mm/hr)=	115.46	19.40		
over (min)	5.00	20.00		
Storage Coeff. (min)=	2.40 (ii)	16.00 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.30	0.07		
			TOTALS	
PEAK FLOW (cms)=	0.12	0.01	0.121 (iii)	
TIME TO PEAK (hrs)=	1.33	1.58	1.33	
RUNOFF VOLUME (mm)=	49.07	13.20	31.12	
TOTAL RAINFALL (mm)=	50.07	50.07	50.07	
RUNOFF COEFFICIENT =	0.98	0.26	0.62	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	10.65	1.551	1.33	34.98
+ ID2= 2 (0055):	0.74	0.121	1.33	31.12
ID = 3 (0015):	11.39	1.672	1.33	34.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF

IN= 2---> OUT= 1 / DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	1.672	1.33	34.73
OUTFLOW: ID= 1 (0005)	11.390	0.143	3.08	34.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.57
TIME SHIFT OF PEAK FLOW (min)=105.00
MAXIMUM STORAGE USED (ha.m.)= 0.2829

CALIB / STANDHYD (0203) / ID= 1 DT= 5.0 min	Area (ha)= 2.60	Total Imp(%)= 75.00	Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.21	1.083	19.92	2.083	8.32	3.08	4.85
0.167	4.21	1.167	19.92	2.167	8.32	3.17	4.85
0.250	4.70	1.250	115.46	2.250	7.35	3.25	4.57
0.333	4.70	1.333	115.46	2.333	7.35	3.33	4.57
0.417	5.37	1.417	24.45	2.417	6.62	3.42	4.32
0.500	5.37	1.500	24.45	2.500	6.62	3.50	4.32

0.583	6.32	1.583	15.42	2.583	6.04	3.58	4.11
0.667	6.32	1.667	15.42	2.667	6.04	3.67	4.11
0.750	7.83	1.750	11.76	2.750	5.57	3.75	3.91
0.833	7.83	1.833	11.76	2.833	5.57	3.83	3.91
0.917	10.71	1.917	9.68	2.917	5.18	3.92	3.74
1.000	10.71	2.000	9.68	3.000	5.18	4.00	3.74

Max.Eff.Inten.(mm/hr)=	115.46	84.55	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.31 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.14	
			TOTALS
PEAK FLOW (cms)=	0.45	0.11	0.545 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	49.07	22.10	36.93
TOTAL RAINFALL (mm)=	50.07	50.07	50.07
RUNOFF COEFFICIENT =	0.98	0.44	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039) IN= 2---> OUT= 1 DT= 5.0 min	OVERFLOW IS OFF			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.545	1.33	36.93
OUTFLOW: ID= 1 (0039)	2.600	0.018	4.00	36.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.28
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.0795

ADD HYD (0035)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.345	2.00	14.40
+ ID2= 2 (0030):	65.60	0.605	3.75	13.24
ID = 3 (0035):	84.10	0.770	3.33	13.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	0.770	3.33	13.49
+ ID2= 2 (0039):	2.60	0.018	4.00	36.50
ID = 1 (0035):	86.70	0.788	3.33	14.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)

3 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	0.788	3.33	14.18
+ ID2= 2 (0004):	31.57	0.233	4.00	32.05
ID = 3 (0035):	118.27	1.003	3.58	18.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	118.27	1.003	3.58	18.95
+ ID2= 2 (0005):	11.39	0.143	3.08	34.65
ID = 1 (0035):	129.66	1.144	3.50	20.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:d.25yr 4hr 10min Chicago **
****

CHICAGO STORM Ptotal= 58.11 mm	IDF curve parameters: A= 670.080 B= 0.000 C= 0.699

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.89	1.00	23.12	2.00	9.66	3.00	5.63
0.17	5.46	1.17	134.01	2.17	8.53	3.17	5.30
0.33	6.23	1.33	28.38	2.33	7.68	3.33	5.02
0.50	7.34	1.50	17.89	2.50	7.01	3.50	4.77
0.67	9.09	1.67	13.64	2.67	6.46	3.67	4.54
0.83	12.43	1.83	11.24	2.83	6.01	3.83	4.35

CALIB NASHYD (0030) ID= 1 DT= 5.0 min	Area (ha)= 65.60 Ia (mm)= 6.51 U.H. Tp(hrs)= 1.68	Curve Number (CN)= 71.8 # of Linear Res.(N)= 3.00

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 0.806 (i)
TIME TO PEAK (hrs)= 3.750
RUNOFF VOLUME (mm)= 17.591
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.303

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

CALIB NASHYD (0042) ID= 1 DT= 5.0 min	Area (ha)= 6.48 Ia (mm)= 5.92 U.H. Tp(hrs)= 0.41	Curve Number (CN)= 71.6 # of Linear Res.(N)= 3.00

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.200 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 17.808
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.306

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

CALIB NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3

ID= 1 DT= 5.0 min	Ia (mm)= 4.73 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.70

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	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.291 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 19.530
TOTAL RAINFALL (mm)= 58.111
RUNOFF COEFFICIENT = 0.336

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

ADD HYD (0001)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0042):	6.48	0.200	1.75	17.81
	+ ID2= 2 (0043):	12.02	0.291	2.17	19.53
	ID = 3 (0001):	18.50	0.462	2.00	18.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (0201)| Area (ha)= 29.60

ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	19.24	10.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	444.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

				TOTALS
Max.Eff.Inten.(mm/hr)=	134.01	77.50		
over (min)	5.00	15.00		
Storage Coeff. (min)=	6.84 (ii)	14.66 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.18	0.08		
PEAK FLOW (cms)=	3.98	1.07	4.523 (iii)	
TIME TO PEAK (hrs)=	1.33	1.50	1.33	
RUNOFF VOLUME (mm)=	57.11	23.66	38.71	
TOTAL RAINFALL (mm)=	58.11	58.11	58.11	
RUNOFF COEFFICIENT =	0.98	0.41	0.67	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.99	0.99
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	114.60	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

				TOTALS
Max.Eff.Inten.(mm/hr)=	134.01	25.31		
over (min)	5.00	20.00		
Storage Coeff. (min)=	3.04 (ii)	15.26 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.27	0.07		
PEAK FLOW (cms)=	0.36	0.04	0.369 (iii)	
TIME TO PEAK (hrs)=	1.33	1.58	1.33	
RUNOFF VOLUME (mm)=	57.11	16.87	36.98	
TOTAL RAINFALL (mm)=	58.11	58.11	58.11	
RUNOFF COEFFICIENT =	0.98	0.29	0.64	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

ADD HYD (0016)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0012):	1.97	0.369	1.33	36.98
	+ ID2= 2 (0201):	29.60	4.523	1.33	38.71
	ID = 3 (0016):	31.57	4.892	1.33	38.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	IN= 2---> OUT= 1	DT= 5.0 min	OVERFLOW IS OFF	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
				0.0000	0.0000	0.4210	1.0000
				0.0080	0.0700	0.5630	1.1000
				0.0230	0.1400	0.7190	1.2000
				0.0440	0.3800	0.8890	1.3000
				0.0490	0.4600	1.0710	1.4100
				0.0530	0.5400	1.2650	1.5200
				0.0580	0.6300	1.4690	1.6300
				0.1050	0.7200	1.6840	1.7400
				0.1890	0.8100	1.9080	1.8600
				0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	4.892	1.33	38.60
OUTFLOW: ID= 1 (0004)	31.570	0.351	3.67	38.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.17
TIME SHIFT OF PEAK FLOW (min)=140.00
MAXIMUM STORAGE USED (ha.m.)= 0.9443

CALIB	STANDHYD (0202)	Area (ha)= 10.65
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)

Post-Development

Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Max.Eff.Inten.(mm/hr)=		134.01	102.24	
over (min)		5.00	15.00	
Storage Coeff. (min)=		5.04 (ii)	12.03 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.21	0.09	
				TOTALS
PEAK FLOW	(cms)=	1.58	0.56	1.873 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	57.11	29.65	42.00
TOTAL RAINFALL	(mm)=	58.11	58.11	58.11
RUNOFF COEFFICIENT	=	0.98	0.51	0.72

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74

Post-Development

ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Max.Eff.Inten.(mm/hr)=		134.01	26.25	
over (min)		5.00	15.00	
Storage Coeff. (min)=		2.26 (ii)	14.31 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.30	0.08	
				TOTALS
PEAK FLOW	(cms)=	0.14	0.02	0.144 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	57.11	17.42	37.25
TOTAL RAINFALL	(mm)=	58.11	58.11	58.11
RUNOFF COEFFICIENT	=	0.98	0.30	0.64

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Development

ADD HYD (0015)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	1.873	1.33	42.00
+ ID2= 2 (0055):		0.74	0.144	1.33	37.25
ID = 3 (0015):		11.39	2.017	1.33	41.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005) | OVERFLOW IS OFF
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1220	0.2700
0.0050	0.0190	0.1750	0.3020
0.0120	0.0600	0.2360	0.3340
0.0140	0.0830	0.3020	0.3680
0.0160	0.1060	0.3740	0.4040
0.0180	0.1310	0.4520	0.4400
0.0200	0.1560	0.5340	0.4780
0.0210	0.1830	0.6210	0.5180
0.0410	0.2110	0.7130	0.5580
0.0770	0.2400	0.8080	0.6000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)		11.390	2.017	1.33	41.70
OUTFLOW: ID= 1 (0005)		11.390	0.207	2.67	41.61

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.25
TIME SHIFT OF PEAK FLOW (min)= 80.00
MAXIMUM STORAGE USED (ha.m.)= 0.3187

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00

Post-Development

Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.89	1.083	23.12	2.083	9.66	3.08	5.63
0.167	4.89	1.167	23.12	2.167	9.66	3.17	5.63
0.250	5.46	1.250	134.01	2.250	8.53	3.25	5.30
0.333	5.46	1.333	134.01	2.333	8.53	3.33	5.30
0.417	6.23	1.417	28.38	2.417	7.68	3.42	5.02
0.500	6.23	1.500	28.38	2.500	7.68	3.50	5.02
0.583	7.34	1.583	17.89	2.583	7.01	3.58	4.77
0.667	7.34	1.667	17.89	2.667	7.01	3.67	4.77
0.750	9.09	1.750	13.64	2.750	6.46	3.75	4.54
0.833	9.09	1.833	13.64	2.833	6.46	3.83	4.54
0.917	12.43	1.917	11.24	2.917	6.01	3.92	4.35
1.000	12.43	2.000	11.24	3.000	6.01	4.00	4.35

Max.Eff.Inten.(mm/hr)=		134.01	108.31	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.18 (ii)	6.76 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.31	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.53	0.14	0.649 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	57.11	27.86	43.95
TOTAL RAINFALL	(mm)=	58.11	58.11	58.11
RUNOFF COEFFICIENT	=	0.98	0.48	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039) | OVERFLOW IS OFF
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)

0.0000 0.0000 | 0.0900 0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.649	1.33	43.95
OUTFLOW: ID= 1 (0039)	2.600	0.021	4.00	43.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.28
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.0946

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0001):	18.50	0.462	2.00	18.93
+ ID2= 2 (0030):	65.60	0.806	3.75	17.59
ID = 3 (0035):	84.10	1.024	3.25	17.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0035):	84.10	1.024	3.25	17.89
+ ID2= 2 (0039):	2.60	0.021	4.00	43.51
ID = 1 (0035):	86.70	1.045	3.25	18.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0035):	86.70	1.045	3.25	18.65
+ ID2= 2 (0004):	31.57	0.351	3.67	38.53
ID = 3 (0035):	118.27	1.391	3.33	23.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0035):	118.27	1.391	3.33	23.96
+ ID2= 2 (0005):	11.39	0.207	2.67	41.61
ID = 1 (0035):	129.66	1.587	3.25	25.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:e.50yr 4hr 10min Chicago **
****

CHICAGO STORM	IDF curve parameters: A= 754.058
Ptotal= 65.39 mm	B= 0.000
	C= 0.699

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	5.50	1.00	26.02	2.00	10.87	3.00	6.33
0.17	6.14	1.17	150.80	2.17	9.60	3.17	5.97
0.33	7.01	1.33	31.93	2.33	8.64	3.33	5.64
0.50	8.26	1.50	20.13	2.50	7.89	3.50	5.36
0.67	10.23	1.67	15.35	2.67	7.27	3.67	5.11
0.83	13.99	1.83	12.65	2.83	6.76	3.83	4.89

CALIB			
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8	
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 1.004 (i)
TIME TO PEAK (hrs)= 3.667
RUNOFF VOLUME (mm)= 21.856
TOTAL RAINFALL (mm)= 65.394
RUNOFF COEFFICIENT = 0.334

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

CALIB			
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.41		

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	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.252 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 22.074
TOTAL RAINFALL (mm)= 65.394
RUNOFF COEFFICIENT = 0.338

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

CALIB			
NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3	
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.70		

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	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.362 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 24.024
TOTAL RAINFALL (mm)= 65.394
RUNOFF COEFFICIENT = 0.367

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

ADD HYD (0001)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0042):	6.48	0.252	1.75	22.07	
+ ID2= 2 (0043):	12.02	0.362	2.17	24.02	
ID = 3 (0001):	18.50	0.576	2.00	23.34	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0201)	Area (ha)= 29.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Max.Eff.Inten.(mm/hr)=		150.80	95.62
over (min)		5.00	15.00
Storage Coeff. (min)=		6.53 (ii)	13.71 (ii)
Unit Hyd. Tpeak (min)=		5.00	15.00
Unit Hyd. peak (cms)=		0.18	0.08

			TOTALS
PEAK FLOW	(cms)=	4.56	1.37	5.262 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	64.39	28.71	44.76
TOTAL RAINFALL	(mm)=	65.39	65.39	65.39
RUNOFF COEFFICIENT	=	0.98	0.44	0.68

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)= 1.97		
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Max.Eff.Inten.(mm/hr)=		150.80	31.92
over (min)		5.00	15.00

			TOTALS
Storage Coeff. (min)=		2.90 (ii)	14.04 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.28	0.08	
PEAK FLOW	(cms)=	0.40	0.06	0.429 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	64.39	20.90	42.64
TOTAL RAINFALL	(mm)=	65.39	65.39	65.39
RUNOFF COEFFICIENT	=	0.98	0.32	0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0012):	1.97	0.429	1.33	42.64	
+ ID2= 2 (0201):	29.60	5.262	1.33	44.76	
ID = 3 (0016):	31.57	5.691	1.33	44.63	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0016)	31.570	5.691	1.33	44.63
OUTFLOW: ID= 1 (0004)	31.570	0.470	3.25	44.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.25
TIME SHIFT OF PEAK FLOW (min)=115.00
MAXIMUM STORAGE USED (ha.m.)= 1.0342

CALIB			
STANDHYD (0202)	Area (ha)= 10.65		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Max.Eff.Inten.(mm/hr)=		150.80	124.29
over (min)		5.00	15.00
Storage Coeff. (min)=		4.80 (ii)	11.27 (ii)
Unit Hyd. Tpeak (min)=		5.00	15.00
Unit Hyd. peak (cms)=		0.22	0.09

				TOTALS
PEAK FLOW	(cms)=	1.80	0.69	2.174 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33

Post-Development

RUNOFF VOLUME (mm)=	64.39	35.49	48.50
TOTAL RAINFALL (mm)=	65.39	65.39	65.39
RUNOFF COEFFICIENT =	0.98	0.54	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)=	0.74
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.37	0.37
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	70.24	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Max.Eff.Inten.(mm/hr)=	150.80	42.86
over (min)	5.00	15.00
Storage Coeff. (min)=	2.16 (ii)	12.06 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00

Post-Development

OUTFLOW: ID= 1 (0005)	11.390	0.271	2.42	48.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.60
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.3523

CALIB		
STANDHYD (0203)	Area (ha)=	2.60
ID= 1 DT= 5.0 min	Total Imp(%)=	75.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.95	0.65
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	131.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.50	1.083	26.02	2.083	10.87	3.08	6.33
0.167	5.50	1.167	26.02	2.167	10.87	3.17	6.33
0.250	6.14	1.250	150.80	2.250	9.60	3.25	5.97
0.333	6.14	1.333	150.80	2.333	9.60	3.33	5.97
0.417	7.01	1.417	31.93	2.417	8.64	3.42	5.64
0.500	7.01	1.500	31.93	2.500	8.64	3.50	5.64
0.583	8.26	1.583	20.13	2.583	7.89	3.58	5.36
0.667	8.26	1.667	20.13	2.667	7.89	3.67	5.36
0.750	10.23	1.750	15.35	2.750	7.27	3.75	5.11
0.833	10.23	1.833	15.35	2.833	7.27	3.83	5.11
0.917	13.99	1.917	12.65	2.917	6.76	3.92	4.89
1.000	13.99	2.000	12.65	3.000	6.76	4.00	4.89

Max.Eff.Inten.(mm/hr)=	150.80	131.19	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.08 (ii)	6.45 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.31	0.14	
			TOTALS
PEAK FLOW (cms)=	0.60	0.17	0.745 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	64.39	33.33	50.42
TOTAL RAINFALL (mm)=	65.39	65.39	65.39

Post-Development

Unit Hyd. peak (cms)=	0.31	0.09		
				TOTALS
PEAK FLOW (cms)=	0.15	0.02		0.165 (iii)
TIME TO PEAK (hrs)=	1.33	1.50		1.33
RUNOFF VOLUME (mm)=	64.39	21.55		42.96
TOTAL RAINFALL (mm)=	65.39	65.39		65.39
RUNOFF COEFFICIENT =	0.98	0.33		0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	10.65	2.174	1.33	48.50
+ ID2= 2 (0055):	0.74	0.165	1.33	42.96
ID = 3 (0015):	11.39	2.340	1.33	48.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	2.340	1.33	48.14

Post-Development

RUNOFF COEFFICIENT =	0.98	0.51		0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.745	1.33	50.42
OUTFLOW: ID= 1 (0039)	2.600	0.024	4.00	49.98

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.27
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.1085

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.576	2.00	23.34
+ ID2= 2 (0030):	65.60	1.004	3.67	21.86
ID = 3 (0035):	84.10	1.274	3.17	22.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	1.274	3.17	22.18
+ ID2= 2 (0039):	2.60	0.024	4.00	49.98

ID = 1 (0035):	86.70	1.297	3.17	23.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	1.297	3.17	23.02
+ ID2= 2 (0004):	31.57	0.470	3.25	44.56
ID = 3 (0035):	118.27	1.767	3.25	28.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	118.27	1.767	3.25	28.77
+ ID2= 2 (0005):	11.39	0.271	2.42	48.05
ID = 1 (0035):	129.66	2.017	3.08	30.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:f.100yr 4hr 10min Chicago **
****

CHICAGO STORM	
Ptotal= 71.92 mm	IDF curve parameters: A= 829.289
	B= 0.000
	C= 0.699
	used in: INTENSITY = A / (t + B)^C
	Duration of storm = 4.00 hrs
	Storm time step = 10.00 min
	Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	6.05	1.00	28.62	2.00	11.96	3.00	6.97
0.17	6.76	1.17	165.85	2.17	10.56	3.17	6.56
0.33	7.71	1.33	35.12	2.33	9.50	3.33	6.21
0.50	9.08	1.50	22.14	2.50	8.67	3.50	5.90
0.67	11.25	1.67	16.89	2.67	8.00	3.67	5.62

0.83	15.39	1.83	13.91	2.83	7.44	3.83	5.38

CALIB	
NASHYD (0030)	Area (ha)= 65.60 Curve Number (CN)= 71.8
ID= 1 DT= 5.0 min	Ia (mm)= 6.51 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.68

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	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 1.192 (i)
TIME TO PEAK (hrs)= 3.667
RUNOFF VOLUME (mm)= 25.902
TOTAL RAINFALL (mm)= 71.918
RUNOFF COEFFICIENT = 0.360

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

CALIB	
NASHYD (0042)	Area (ha)= 6.48 Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.92 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41

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	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.302 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 26.119
TOTAL RAINFALL (mm)= 71.918
RUNOFF COEFFICIENT = 0.363

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

CALIB	
NASHYD (0043)	Area (ha)= 12.02 Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)= 4.73 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70

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	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90

0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.429 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 28.265
TOTAL RAINFALL (mm)= 71.918
RUNOFF COEFFICIENT = 0.393

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.302	1.75	26.12
+ ID2= 2 (0043):	12.02	0.429	2.17	28.26
ID = 3 (0001):	18.50	0.686	2.00	27.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0201)	Area (ha)= 29.60
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	19.24	10.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	444.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97

0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

			TOTALS
Max.Eff.Inten.(mm/hr)=	165.85	112.76	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.29 (ii)	13.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.19	0.08	
PEAK FLOW (cms)=	5.08	1.65	5.944 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	70.92	33.42	50.30
TOTAL RAINFALL (mm)=	71.92	71.92	71.92
RUNOFF COEFFICIENT =	0.99	0.46	0.70

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)=	1.97	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

			TOTALS
Max.Eff.Inten.(mm/hr)=	165.85	49.73	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.79 (ii)	12.12 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.28	0.09	
PEAK FLOW (cms)=	0.44	0.07	0.479 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	70.92	24.74	47.82
TOTAL RAINFALL (mm)=	71.92	71.92	71.92
RUNOFF COEFFICIENT =	0.99	0.34	0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):		1.97	0.479	1.33	47.82
+ ID2= 2 (0201):		29.60	5.944	1.33	50.30
ID = 3 (0016):		31.57	6.423	1.33	50.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

			TOTALS
Max.Eff.Inten.(mm/hr)=	165.85	144.82	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.63 (ii)	10.71 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.22	0.09	
PEAK FLOW (cms)=	2.00	0.82	2.451 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	70.92	40.88	54.40
TOTAL RAINFALL (mm)=	71.92	71.92	71.92
RUNOFF COEFFICIENT =	0.99	0.57	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)=	0.74	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	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	6.05	1.083	28.62	2.083	11.96	3.08	6.97

RESERVOIR(0004)	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	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0016)	31.570	6.423	1.33	50.14
OUTFLOW: ID= 1 (0004)	31.570	0.589	3.00	50.07

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.17
TIME SHIFT OF PEAK FLOW (min)=100.00
MAXIMUM STORAGE USED (ha.m.)= 1.1169

CALIB			
STANDHYD (0202)	Area (ha)=	10.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21

0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90
0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

Max.Eff.Inten.(mm/hr)=	165.85	51.49	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.08 (ii)	11.28 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
			TOTALS
PEAK FLOW (cms)=	0.17	0.03	0.184 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	70.92	25.48	48.19
TOTAL RAINFALL (mm)=	71.92	71.92	71.92
RUNOFF COEFFICIENT =	0.99	0.35	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	2.451	1.33	54.40
+ ID2= 2 (0055):		0.74	0.184	1.33	48.19
ID = 3 (0015):		11.39	2.635	1.33	53.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF
IN= 2---> OUT= 1	

DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	2.635	1.33	53.99
OUTFLOW: ID= 1 (0005)	11.390	0.333	2.33	53.91

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.64
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.3835

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.05	1.083	28.62	2.083	11.96	3.08	6.97
0.167	6.05	1.167	28.62	2.167	11.96	3.17	6.97
0.250	6.76	1.250	165.85	2.250	10.56	3.25	6.56
0.333	6.76	1.333	165.85	2.333	10.56	3.33	6.56
0.417	7.71	1.417	35.12	2.417	9.50	3.42	6.21
0.500	7.71	1.500	35.12	2.500	9.50	3.50	6.21
0.583	9.08	1.583	22.14	2.583	8.67	3.58	5.90

0.667	9.08	1.667	22.14	2.667	8.67	3.67	5.90
0.750	11.25	1.750	16.89	2.750	8.00	3.75	5.62
0.833	11.25	1.833	16.89	2.833	8.00	3.83	5.62
0.917	15.39	1.917	13.91	2.917	7.44	3.92	5.38
1.000	15.39	2.000	13.91	3.000	7.44	4.00	5.38

Max.Eff.Inten.(mm/hr)=	165.85	152.63	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.00 (ii)	6.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.31	0.15	
			TOTALS
PEAK FLOW (cms)=	0.66	0.20	0.833 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	70.92	38.41	56.29
TOTAL RAINFALL (mm)=	71.92	71.92	71.92
RUNOFF COEFFICIENT =	0.99	0.53	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF
IN= 2---> OUT= 1	

DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.833	1.33	56.29
OUTFLOW: ID= 1 (0039)	2.600	0.027	4.00	55.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.27
TIME SHIFT OF PEAK FLOW (min)=160.00
MAXIMUM STORAGE USED (ha.m.)= 0.1211

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3					

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):	18.50	0.686	2.00	27.51
+ ID2= 2 (0030):	65.60	1.192	3.67	25.90
ID = 3 (0035):	84.10	1.512	3.17	26.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0035):		84.10	1.512	3.17	26.26
+ ID2= 2 (0039):		2.60	0.027	4.00	55.85
ID = 1 (0035):		86.70	1.538	3.17	27.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0035):		86.70	1.538	3.17	27.14
+ ID2= 2 (0004):		31.57	0.589	3.00	50.07
ID = 3 (0035):		118.27	2.125	3.08	33.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0035):		118.27	2.125	3.08	33.26
+ ID2= 2 (0005):		11.39	0.333	2.33	53.91
ID = 1 (0035):		129.66	2.427	3.00	35.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:g.2yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\24eaacdf
Ptotal= 55.44 mm	Comments: 2yr 24hr 15min SCS Type II (MTO)

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	1.00	12.50	7.98	18.75	1.00
0.25	0.61	6.50	1.00	12.75	4.10	19.00	1.00
0.50	0.61	6.75	1.00	13.00	4.10	19.25	1.00
0.75	0.61	7.00	1.00	13.25	2.99	19.50	1.00
1.00	0.61	7.25	1.22	13.50	2.99	19.75	1.00
1.25	0.61	7.50	1.22	13.75	2.33	20.00	1.00
1.50	0.61	7.75	1.22	14.00	2.33	20.25	0.67
1.75	0.61	8.00	1.22	14.25	1.66	20.50	0.67
2.00	0.61	8.25	1.44	14.50	1.66	20.75	0.67
2.25	0.72	8.50	1.44	14.75	1.66	21.00	0.67
2.50	0.72	8.75	1.55	15.00	1.66	21.25	0.67
2.75	0.72	9.00	1.55	15.25	1.66	21.50	0.67
3.00	0.72	9.25	1.77	15.50	1.66	21.75	0.67
3.25	0.72	9.50	1.77	15.75	1.66	22.00	0.67
3.50	0.72	9.75	2.00	16.00	1.66	22.25	0.67
3.75	0.72	10.00	2.00	16.25	1.00	22.50	0.67
4.00	0.72	10.25	2.55	16.50	1.00	22.75	0.67
4.25	0.89	10.50	2.55	16.75	1.00	23.00	0.67
4.50	0.89	10.75	3.44	17.00	1.00	23.25	0.67
4.75	0.89	11.00	3.44	17.25	1.00	23.50	0.67
5.00	0.89	11.25	5.32	17.50	1.00	23.75	0.67
5.25	0.89	11.50	5.32	17.75	1.00	24.00	0.67
5.50	0.89	11.75	16.41	18.00	1.00		
5.75	0.89	12.00	67.86	18.25	1.00		
6.00	0.89	12.25	7.98	18.50	1.00		

CALIB			
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8	
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 0.551 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 16.102
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.290

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

CALIB			
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.41		

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67

4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.157 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 16.317
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.294

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

CALIB			
NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3	
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.70		

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	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67

3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.220 (i)
TIME TO PEAK (hrs)= 12.917
RUNOFF VOLUME (mm)= 17.953
TOTAL RAINFALL (mm)= 55.440
RUNOFF COEFFICIENT = 0.324

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.157	12.58	16.32
+ ID2= 2 (0043):	12.02	0.220	12.92	17.95
ID = 3 (0001):	18.50	0.355	12.75	17.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0201)	Area (ha)= 29.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67

2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Max.Eff.Inten.(mm/hr)= 67.86 50.82

over (min) 10.00 20.00
Storage Coeff. (min)= 8.99 (ii) 18.24 (ii)
Unit Hyd. Tpeak (min)= 10.00 20.00
Unit Hyd. peak (cms)= 0.12 0.06

TOTALS
PEAK FLOW (cms)= 1.97 0.69 2.430 (iii)
TIME TO PEAK (hrs)= 12.25 12.42 12.33
RUNOFF VOLUME (mm)= 54.44 21.87 36.53
TOTAL RAINFALL (mm)= 55.44 55.44 55.44
RUNOFF COEFFICIENT = 0.98 0.39 0.66

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)= 1.97		
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00

1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67

5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Max.Eff.Inten.(mm/hr)= 67.86 20.86
over (min) 5.00 20.00
Storage Coeff. (min)= 3.99 (ii) 17.20 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.24 0.06

TOTALS
PEAK FLOW (cms)= 0.18 0.03 0.201 (iii)
TIME TO PEAK (hrs)= 12.25 12.42 12.25
RUNOFF VOLUME (mm)= 54.44 15.46 34.95
TOTAL RAINFALL (mm)= 55.44 55.44 55.44
RUNOFF COEFFICIENT = 0.98 0.28 0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	1.97	0.201	12.25	34.95
+ ID2= 2 (0201):	29.60	2.430	12.33	36.53
ID = 3 (0016):	31.57	2.631	12.25	36.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	2.631	12.25	36.43
OUTFLOW: ID= 1 (0004)	31.570	0.151	14.42	36.36

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.74
TIME SHIFT OF PEAK FLOW (min)=130.00
MAXIMUM STORAGE USED (ha.m.)= 0.7693

CALIB			
STANDHYD (0202)	Area (ha)= 10.65		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00

0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67

4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Max.Eff.Inten.(mm/hr)=		67.86	64.53	
over (min)		5.00	20.00	
Storage Coeff. (min)=		6.61 (ii)	15.02 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.18	0.07	
				TOTALS
PEAK FLOW	(cms)=	0.83	0.35	1.069 (iii)
TIME TO PEAK	(hrs)=	12.25	12.42	12.25
RUNOFF VOLUME	(mm)=	54.44	27.56	39.65
TOTAL RAINFALL	(mm)=	55.44	55.44	55.44
RUNOFF COEFFICIENT	=	0.98	0.50	0.72

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74		
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	

		IMPERVIOUS	PERVIOUS (i)

Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67
2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67

3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Max.Eff.Inten.(mm/hr)=	67.86	21.61	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.97 (ii)	16.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.28	0.07	
			TOTALS
PEAK FLOW (cms)=	0.07	0.01	0.077 (iii)
TIME TO PEAK (hrs)=	12.25	12.42	12.25
RUNOFF VOLUME (mm)=	54.44	15.97	35.19
TOTAL RAINFALL (mm)=	55.44	55.44	55.44

RUNOFF COEFFICIENT = 0.98 0.29 0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	10.65	1.069	12.25	39.65
	+ ID2= 2 (0055):	0.74	0.077	12.25	35.19
	ID = 3 (0015):	11.39	1.146	12.25	39.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	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	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	1.146	12.25	39.36
OUTFLOW: ID= 1 (0005)	11.390	0.116	13.33	39.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.10
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.2658

CALIB							
STANDHYD (0203)	Area (ha)= 2.60						
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 55.00					

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.95	0.65
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	131.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.89	12.250	67.86	18.33	1.00
0.167	0.00	6.250	0.89	12.333	7.99	18.42	1.00
0.250	0.00	6.333	1.00	12.417	7.98	18.50	1.00
0.333	0.61	6.417	1.00	12.500	7.98	18.58	1.00
0.417	0.61	6.500	1.00	12.583	7.98	18.67	1.00
0.500	0.61	6.583	1.00	12.667	7.98	18.75	1.00
0.583	0.61	6.667	1.00	12.750	7.98	18.83	1.00
0.667	0.61	6.750	1.00	12.833	4.10	18.92	1.00
0.750	0.61	6.833	1.00	12.917	4.10	19.00	1.00
0.833	0.61	6.917	1.00	13.000	4.10	19.08	1.00
0.917	0.61	7.000	1.00	13.083	4.10	19.17	1.00
1.000	0.61	7.083	1.00	13.167	4.10	19.25	1.00
1.083	0.61	7.167	1.00	13.250	4.10	19.33	1.00
1.167	0.61	7.250	1.00	13.333	2.99	19.42	1.00
1.250	0.61	7.333	1.22	13.417	2.99	19.50	1.00
1.333	0.61	7.417	1.22	13.500	2.99	19.58	1.00
1.417	0.61	7.500	1.22	13.583	2.99	19.67	1.00
1.500	0.61	7.583	1.22	13.667	2.99	19.75	1.00
1.583	0.61	7.667	1.22	13.750	2.99	19.83	1.00
1.667	0.61	7.750	1.22	13.833	2.33	19.92	1.00
1.750	0.61	7.833	1.22	13.917	2.33	20.00	1.00
1.833	0.61	7.917	1.22	14.000	2.33	20.08	1.00
1.917	0.61	8.000	1.22	14.083	2.33	20.17	1.00
2.000	0.61	8.083	1.22	14.167	2.33	20.25	1.00
2.083	0.61	8.167	1.22	14.250	2.33	20.33	0.67
2.167	0.61	8.250	1.22	14.333	1.66	20.42	0.67
2.250	0.61	8.333	1.44	14.417	1.66	20.50	0.67
2.333	0.72	8.417	1.44	14.500	1.66	20.58	0.67
2.417	0.72	8.500	1.44	14.583	1.66	20.67	0.67

2.500	0.72	8.583	1.44	14.667	1.66	20.75	0.67
2.583	0.72	8.667	1.44	14.750	1.66	20.83	0.67
2.667	0.72	8.750	1.44	14.833	1.66	20.92	0.67
2.750	0.72	8.833	1.55	14.917	1.66	21.00	0.67
2.833	0.72	8.917	1.55	15.000	1.66	21.08	0.67
2.917	0.72	9.000	1.55	15.083	1.66	21.17	0.67
3.000	0.72	9.083	1.55	15.167	1.66	21.25	0.67
3.083	0.72	9.167	1.55	15.250	1.66	21.33	0.67
3.167	0.72	9.250	1.55	15.333	1.66	21.42	0.67
3.250	0.72	9.333	1.77	15.417	1.66	21.50	0.67
3.333	0.72	9.417	1.77	15.500	1.66	21.58	0.67
3.417	0.72	9.500	1.77	15.583	1.66	21.67	0.67
3.500	0.72	9.583	1.77	15.667	1.66	21.75	0.67
3.583	0.72	9.667	1.77	15.750	1.66	21.83	0.67
3.667	0.72	9.750	1.77	15.833	1.66	21.92	0.67
3.750	0.72	9.833	2.00	15.917	1.66	22.00	0.67
3.833	0.72	9.917	2.00	16.000	1.66	22.08	0.67
3.917	0.72	10.000	2.00	16.083	1.66	22.17	0.67
4.000	0.72	10.083	2.00	16.167	1.66	22.25	0.67
4.083	0.72	10.167	2.00	16.250	1.66	22.33	0.67
4.167	0.72	10.250	2.00	16.333	1.00	22.42	0.67
4.250	0.72	10.333	2.55	16.417	1.00	22.50	0.67
4.333	0.89	10.417	2.55	16.500	1.00	22.58	0.67
4.417	0.89	10.500	2.55	16.583	1.00	22.67	0.67
4.500	0.89	10.583	2.55	16.667	1.00	22.75	0.67
4.583	0.89	10.667	2.55	16.750	1.00	22.83	0.67
4.667	0.89	10.750	2.55	16.833	1.00	22.92	0.67
4.750	0.89	10.833	3.44	16.917	1.00	23.00	0.67
4.833	0.89	10.917	3.44	17.000	1.00	23.08	0.67
4.917	0.89	11.000	3.44	17.083	1.00	23.17	0.67
5.000	0.89	11.083	3.44	17.167	1.00	23.25	0.67
5.083	0.89	11.167	3.44	17.250	1.00	23.33	0.67
5.167	0.89	11.250	3.44	17.333	1.00	23.42	0.67
5.250	0.89	11.333	5.32	17.417	1.00	23.50	0.67
5.333	0.89	11.417	5.32	17.500	1.00	23.58	0.67
5.417	0.89	11.500	5.32	17.583	1.00	23.67	0.67
5.500	0.89	11.583	5.32	17.667	1.00	23.75	0.67
5.583	0.89	11.667	5.32	17.750	1.00	23.83	0.67
5.667	0.89	11.750	5.32	17.833	1.00	23.92	0.67
5.750	0.89	11.833	16.41	17.917	1.00	24.00	0.67
5.833	0.89	11.917	16.41	18.000	1.00	24.08	0.67
5.917	0.89	12.000	16.41	18.083	1.00	24.17	0.67
6.000	0.89	12.083	67.85	18.167	1.00	24.25	0.66
6.083	0.89	12.167	67.86	18.250	1.00		

Max.Eff.Inten.(mm/hr)=	67.86	67.68	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.86 (ii)	11.11 (ii)	

Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.28	0.09	
			TOTALS
PEAK FLOW (cms)=	0.27	0.08	0.335 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	54.44	25.91	41.60
TOTAL RAINFALL (mm)=	55.44	55.44	55.44
RUNOFF COEFFICIENT =	0.98	0.47	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.335	12.25	41.60
OUTFLOW: ID= 1 (0039)	2.600	0.015	13.92	41.17

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.61
TIME SHIFT OF PEAK FLOW (min)=100.00
MAXIMUM STORAGE USED (ha.m.)= 0.0687

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.355	12.75	17.38
+ ID2= 2 (0030):	65.60	0.551	14.08	16.10
ID = 3 (0035):	84.10	0.710	13.50	16.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	0.710	13.50	16.38
+ ID2= 2 (0039):	2.60	0.015	13.92	41.17
ID = 1 (0035):	86.70	0.726	13.50	17.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	0.726	13.50	17.13
+ ID2= 2 (0004):	31.57	0.151	14.42	36.36
ID = 3 (0035):	118.27	0.862	13.67	22.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	118.27	0.862	13.67	22.26
+ ID2= 2 (0005):	11.39	0.116	13.33	39.28
ID = 1 (0035):	129.66	0.975	13.58	23.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:h.5yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\161bbdf1
Ptotal= 73.66 mm	Comments: 5yr 24hr 15min SCS Type II (MTO)

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	1.33	12.50	10.61	18.75	1.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.81	6.50	1.33	12.75	5.45	19.00	1.33
0.50	0.81	6.75	1.33	13.00	5.45	19.25	1.33
0.75	0.81	7.00	1.33	13.25	3.98	19.50	1.33
1.00	0.81	7.25	1.62	13.50	3.98	19.75	1.33
1.25	0.81	7.50	1.62	13.75	3.09	20.00	1.33
1.50	0.81	7.75	1.62	14.00	3.09	20.25	0.88
1.75	0.81	8.00	1.62	14.25	2.21	20.50	0.88
2.00	0.81	8.25	1.92	14.50	2.21	20.75	0.88
2.25	0.96	8.50	1.92	14.75	2.21	21.00	0.88
2.50	0.96	8.75	2.06	15.00	2.21	21.25	0.88
2.75	0.96	9.00	2.06	15.25	2.21	21.50	0.88
3.00	0.96	9.25	2.36	15.50	2.21	21.75	0.88
3.25	0.96	9.50	2.36	15.75	2.21	22.00	0.88
3.50	0.96	9.75	2.65	16.00	2.21	22.25	0.88
3.75	0.96	10.00	2.65	16.25	1.33	22.50	0.88
4.00	0.96	10.25	3.39	16.50	1.33	22.75	0.88
4.25	1.18	10.50	3.39	16.75	1.33	23.00	0.88
4.50	1.18	10.75	4.57	17.00	1.33	23.25	0.88
4.75	1.18	11.00	4.57	17.25	1.33	23.50	0.88
5.00	1.18	11.25	7.07	17.50	1.33	23.75	0.88
5.25	1.18	11.50	7.07	17.75	1.33	24.00	0.88
5.50	1.18	11.75	21.80	18.00	1.33		
5.75	1.18	12.00	90.16	18.25	1.33		
6.00	1.18	12.25	10.61	18.50	1.33		

CALIB			
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8	
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88

4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 0.943 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 27.015
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.367

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

CALIB			
NASHYD (0042)	Area (ha)=	6.48	Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33

0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88

4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.268 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 27.231
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.370

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

CALIB			
NASHYD (0043)	Area (ha)=	12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

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	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33

0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88

4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.367 (i)
TIME TO PEAK (hrs)= 12.917
RUNOFF VOLUME (mm)= 29.429
TOTAL RAINFALL (mm)= 73.660
RUNOFF COEFFICIENT = 0.400

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.268	12.50	27.23
+ ID2= 2 (0043):	12.02	0.367	12.92	29.43
ID = 3 (0001):	18.50	0.598	12.67	28.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0201)	Area (ha)=	29.60	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	19.24	10.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	444.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88

3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Max.Eff.Inten.(mm/hr)=	90.16	80.49	
over (min)	10.00	20.00	
Storage Coeff. (min)=	8.02 (ii)	15.72 (ii)	
Unit Hyd. Tpeak (min)=	10.00	20.00	
Unit Hyd. peak (cms)=	0.13	0.07	
			TOTALS
PEAK FLOW (cms)=	2.73	1.19	3.535 (iii)
TIME TO PEAK (hrs)=	12.25	12.42	12.33
RUNOFF VOLUME (mm)=	72.66	34.71	51.79
TOTAL RAINFALL (mm)=	73.66	73.66	73.66

RUNOFF COEFFICIENT =	0.99	0.47	0.70

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)=	1.97	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.99	0.99
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	114.60	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33

1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88

5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Max.Eff.Inten.(mm/hr)=	90.16	35.27	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.56 (ii)	14.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.08	
			TOTALS
PEAK FLOW (cms)=	0.24	0.06	0.292 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	72.66	25.79	49.22
TOTAL RAINFALL (mm)=	73.66	73.66	73.66
RUNOFF COEFFICIENT =	0.99	0.35	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):	1.97	0.292	12.25	49.22
+ ID2= 2 (0201):	29.60	3.535	12.33	51.79
ID = 3 (0016):	31.57	3.821	12.25	51.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	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	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000

0.0490	0.4600	1.0710	1.4100
0.0530	0.5400	1.2650	1.5200
0.0580	0.6300	1.4690	1.6300
0.1050	0.7200	1.6840	1.7400
0.1890	0.8100	1.9080	1.8600
0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	3.821	12.25	51.63
OUTFLOW: ID= 1 (0004)	31.570	0.408	13.42	51.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.68
TIME SHIFT OF PEAK FLOW (min)= 70.00
MAXIMUM STORAGE USED (ha.m.)= 0.9899

CALIB			
STANDHYD (0202)	Area (ha)= 10.65		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33

1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88

5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Max.Eff.Inten.(mm/hr)=	90.16	98.29	
over (min)	5.00	15.00	
Storage Coeff. (min)=	5.90 (ii)	13.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.19	0.08	
			TOTALS
PEAK FLOW (cms)=	1.13	0.61	1.655 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	72.66	42.34	55.98
TOTAL RAINFALL (mm)=	73.66	73.66	73.66
RUNOFF COEFFICIENT =	0.99	0.57	0.76

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)=	0.74	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88

3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Max.Eff.Inten.(mm/hr)=	90.16	36.40	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.65 (ii)	13.23 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.29	0.08	
			TOTALS
PEAK FLOW (cms)=	0.09	0.02	0.112 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	72.66	26.56	49.60
TOTAL RAINFALL (mm)=	73.66	73.66	73.66
RUNOFF COEFFICIENT =	0.99	0.36	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	10.65	1.655	12.25	55.98
+ ID2= 2 (0055):	0.74	0.112	12.25	49.60
ID = 3 (0015):	11.39	1.767	12.25	55.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	1.767	12.25	55.57
OUTFLOW: ID= 1 (0005)	11.390	0.264	12.92	55.48

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.93
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 0.3484

CALIB			
STANDHYD (0203)	Area (ha)=	2.60	
ID= 1 DT= 5.0 min	Total Imp(%)=	75.00	Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50

Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.18	12.250	90.16	18.33	1.33
0.167	0.00	6.250	1.18	12.333	10.62	18.42	1.33
0.250	0.00	6.333	1.33	12.417	10.61	18.50	1.33
0.333	0.81	6.417	1.33	12.500	10.61	18.58	1.33
0.417	0.81	6.500	1.33	12.583	10.61	18.67	1.33
0.500	0.81	6.583	1.33	12.667	10.61	18.75	1.33
0.583	0.81	6.667	1.33	12.750	10.61	18.83	1.33
0.667	0.81	6.750	1.33	12.833	5.45	18.92	1.33
0.750	0.81	6.833	1.33	12.917	5.45	19.00	1.33
0.833	0.81	6.917	1.33	13.000	5.45	19.08	1.33
0.917	0.81	7.000	1.33	13.083	5.45	19.17	1.33
1.000	0.81	7.083	1.33	13.167	5.45	19.25	1.33
1.083	0.81	7.167	1.33	13.250	5.45	19.33	1.33
1.167	0.81	7.250	1.33	13.333	3.98	19.42	1.33
1.250	0.81	7.333	1.62	13.417	3.98	19.50	1.33
1.333	0.81	7.417	1.62	13.500	3.98	19.58	1.33
1.417	0.81	7.500	1.62	13.583	3.98	19.67	1.33
1.500	0.81	7.583	1.62	13.667	3.98	19.75	1.33
1.583	0.81	7.667	1.62	13.750	3.98	19.83	1.33
1.667	0.81	7.750	1.62	13.833	3.09	19.92	1.33
1.750	0.81	7.833	1.62	13.917	3.09	20.00	1.33
1.833	0.81	7.917	1.62	14.000	3.09	20.08	1.33
1.917	0.81	8.000	1.62	14.083	3.09	20.17	1.33
2.000	0.81	8.083	1.62	14.167	3.09	20.25	1.33
2.083	0.81	8.167	1.62	14.250	3.09	20.33	0.88
2.167	0.81	8.250	1.62	14.333	2.21	20.42	0.88
2.250	0.81	8.333	1.92	14.417	2.21	20.50	0.88
2.333	0.96	8.417	1.92	14.500	2.21	20.58	0.88
2.417	0.96	8.500	1.92	14.583	2.21	20.67	0.88
2.500	0.96	8.583	1.92	14.667	2.21	20.75	0.88
2.583	0.96	8.667	1.92	14.750	2.21	20.83	0.88
2.667	0.96	8.750	1.92	14.833	2.21	20.92	0.88
2.750	0.96	8.833	2.06	14.917	2.21	21.00	0.88
2.833	0.96	8.917	2.06	15.000	2.21	21.08	0.88
2.917	0.96	9.000	2.06	15.083	2.21	21.17	0.88
3.000	0.96	9.083	2.06	15.167	2.21	21.25	0.88
3.083	0.96	9.167	2.06	15.250	2.21	21.33	0.88
3.167	0.96	9.250	2.06	15.333	2.21	21.42	0.88
3.250	0.96	9.333	2.36	15.417	2.21	21.50	0.88
3.333	0.96	9.417	2.36	15.500	2.21	21.58	0.88
3.417	0.96	9.500	2.36	15.583	2.21	21.67	0.88
3.500	0.96	9.583	2.36	15.667	2.21	21.75	0.88
3.583	0.96	9.667	2.36	15.750	2.21	21.83	0.88
3.667	0.96	9.750	2.36	15.833	2.21	21.92	0.88
3.750	0.96	9.833	2.65	15.917	2.21	22.00	0.88
3.833	0.96	9.917	2.65	16.000	2.21	22.08	0.88
3.917	0.96	10.000	2.65	16.083	2.21	22.17	0.88
4.000	0.96	10.083	2.65	16.167	2.21	22.25	0.88
4.083	0.96	10.167	2.65	16.250	2.21	22.33	0.88
4.167	0.96	10.250	2.65	16.333	1.33	22.42	0.88
4.250	0.96	10.333	3.39	16.417	1.33	22.50	0.88
4.333	1.18	10.417	3.39	16.500	1.33	22.58	0.88
4.417	1.18	10.500	3.39	16.583	1.33	22.67	0.88
4.500	1.18	10.583	3.39	16.667	1.33	22.75	0.88
4.583	1.18	10.667	3.39	16.750	1.33	22.83	0.88
4.667	1.18	10.750	3.39	16.833	1.33	22.92	0.88
4.750	1.18	10.833	4.57	16.917	1.33	23.00	0.88
4.833	1.18	10.917	4.57	17.000	1.33	23.08	0.88
4.917	1.18	11.000	4.57	17.083	1.33	23.17	0.88
5.000	1.18	11.083	4.57	17.167	1.33	23.25	0.88
5.083	1.18	11.167	4.57	17.250	1.33	23.33	0.88
5.167	1.18	11.250	4.57	17.333	1.33	23.42	0.88
5.250	1.18	11.333	7.07	17.417	1.33	23.50	0.88
5.333	1.18	11.417	7.07	17.500	1.33	23.58	0.88
5.417	1.18	11.500	7.07	17.583	1.33	23.67	0.88
5.500	1.18	11.583	7.07	17.667	1.33	23.75	0.88
5.583	1.18	11.667	7.07	17.750	1.33	23.83	0.88
5.667	1.18	11.750	7.07	17.833	1.33	23.92	0.88
5.750	1.18	11.833	21.80	17.917	1.33	24.00	0.88
5.833	1.18	11.917	21.80	18.000	1.33	24.08	0.88
5.917	1.18	12.000	21.80	18.083	1.33	24.17	0.88
6.000	1.18	12.083	90.15	18.167	1.33	24.25	0.88
6.083	1.18	12.167	90.16	18.250	1.33		

Max.Eff.Inten.(mm/hr)=		90.16	103.74
over (min)		5.00	10.00
Storage Coeff. (min)=		2.55 (ii)	9.51 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00
Unit Hyd. peak (cms)=		0.29	0.12
			TOTALS
PEAK FLOW	(cms)=	0.36	0.13	0.492 (iii)
TIME TO PEAK	(hrs)=	12.25	12.25	12.25
RUNOFF VOLUME	(mm)=	72.66	39.79	57.86
TOTAL RAINFALL	(mm)=	73.66	73.66	73.66
RUNOFF COEFFICIENT	=	0.99	0.54	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039) / IN= 2---> OUT= 1 / DT= 5.0 min	OVERFLOW IS OFF			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.492	12.25	57.86
OUTFLOW: ID= 1 (0039)	2.600	0.022	13.83	57.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.38
TIME SHIFT OF PEAK FLOW (min)= 95.00
MAXIMUM STORAGE USED (ha.m.)= 0.0957

ADD HYD (0035) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.598	12.67	28.66
+ ID2= 2 (0030):	65.60	0.943	14.08	27.02
ID = 3 (0035):	84.10	1.213	13.42	27.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	1.213	13.42	27.38
+ ID2= 2 (0039):	2.60	0.022	13.83	57.43
ID = 1 (0035):	86.70	1.234	13.42	28.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	1.234	13.42	28.28
+ ID2= 2 (0004):	31.57	0.408	13.42	51.56
ID = 3 (0035):	118.27	1.642	13.42	34.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	118.27	1.642	13.42	34.49
+ ID2= 2 (0005):	11.39	0.264	12.92	55.48
ID = 1 (0035):	129.66	1.886	13.33	36.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:i.10yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\c116ebda
Ptotal= 85.89 mm	Comments: 10yr 24hr 15min SCS Type II (MTO)

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	1.55	12.50	12.37	18.75	1.55
0.25	0.94	6.50	1.55	12.75	6.36	19.00	1.55
0.50	0.94	6.75	1.55	13.00	6.36	19.25	1.55
0.75	0.94	7.00	1.55	13.25	4.64	19.50	1.55
1.00	0.94	7.25	1.89	13.50	4.64	19.75	1.55
1.25	0.94	7.50	1.89	13.75	3.61	20.00	1.55
1.50	0.94	7.75	1.89	14.00	3.61	20.25	1.03
1.75	0.94	8.00	1.89	14.25	2.58	20.50	1.03
2.00	0.94	8.25	2.23	14.50	2.58	20.75	1.03
2.25	1.12	8.50	2.23	14.75	2.58	21.00	1.03

2.50	1.12	8.75	2.40	15.00	2.58	21.25	1.03
2.75	1.12	9.00	2.40	15.25	2.58	21.50	1.03
3.00	1.12	9.25	2.75	15.50	2.58	21.75	1.03
3.25	1.12	9.50	2.75	15.75	2.58	22.00	1.03
3.50	1.12	9.75	3.09	16.00	2.58	22.25	1.03
3.75	1.12	10.00	3.09	16.25	1.55	22.50	1.03
4.00	1.12	10.25	3.95	16.50	1.55	22.75	1.03
4.25	1.37	10.50	3.95	16.75	1.55	23.00	1.03
4.50	1.37	10.75	5.33	17.00	1.55	23.25	1.03
4.75	1.37	11.00	5.33	17.25	1.55	23.50	1.03
5.00	1.37	11.25	8.25	17.50	1.55	23.75	1.03
5.25	1.37	11.50	8.25	17.75	1.55	24.00	1.03
5.50	1.37	11.75	25.42	18.00	1.55		
5.75	1.37	12.00	105.13	18.25	1.55		
6.00	1.37	12.25	12.37	18.50	1.55		

CALIB		
NASHYD (0030)	Area (ha)=	65.60 Curve Number (CN)= 71.8
ID= 1 DT= 5.0 min	Ia (mm)=	6.51 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.68

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55

1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03

5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 1.239 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 35.175
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.410

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

CALIB		
NASHYD (0042)	Area (ha)=	6.48 Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)=	5.92 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55

1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03

5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.352 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 35.384
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.412

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

CALIB			
NASHYD (0043)	Area (ha)=	12.02	Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.70	

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55

1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03

5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.476 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 37.925
TOTAL RAINFALL (mm)= 85.890
RUNOFF COEFFICIENT = 0.442

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.352	12.50	35.38
+ ID2= 2 (0043):	12.02	0.476	12.83	37.93
ID = 3 (0001):	18.50	0.780	12.67	37.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

STANDHYD (0201)			
CALIB			
ID= 1 DT= 5.0 min	Area (ha)=	29.60	
	Total Imp(%)=	65.00	Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	19.24	10.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	444.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03

3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Max.Eff.Inten.(mm/hr)=	105.13	101.88	
over (min)	10.00	15.00	
Storage Coeff. (min)=	7.54 (ii)	14.55 (ii)	
Unit Hyd. Tpeak (min)=	10.00	15.00	
Unit Hyd. peak (cms)=	0.13	0.08	
			TOTALS
PEAK FLOW (cms)=	3.24	1.66	4.650 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	84.89	44.04	62.42
TOTAL RAINFALL (mm)=	85.89	85.89	85.89
RUNOFF COEFFICIENT =	0.99	0.51	0.73

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03

2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Max.Eff.Inten.(mm/hr)=	105.13	49.63	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.35 (ii)	12.69 (ii)	

			TOTALS
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.08	
PEAK FLOW (cms)=	0.29	0.08	0.353 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	84.89	33.55	59.22
TOTAL RAINFALL (mm)=	85.89	85.89	85.89
RUNOFF COEFFICIENT =	0.99	0.39	0.69

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	1.97	0.353	12.25	59.22
+ ID2= 2 (0201):	29.60	4.650	12.25	62.42
ID = 3 (0016):	31.57	5.003	12.25	62.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 (0016)	31.570	5.003	12.25	62.22
OUTFLOW: ID= 1 (0004)	31.570	0.635	13.08	62.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.70
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 1.1465

CALIB		
STANDHYD (0202)	Area (ha)=	10.65
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55

1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03

5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Max.Eff.Inten.(mm/hr)=		105.13	121.83	
over (min)		5.00	15.00	
Storage Coeff. (min)=		5.55 (ii)	12.07 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.20	0.09	
				TOTALS
PEAK FLOW	(cms)=	1.33	0.79	2.015 (iii)
TIME TO PEAK	(hrs)=	12.25	12.33	12.25
RUNOFF VOLUME	(mm)=	84.89	52.80	67.24
TOTAL RAINFALL	(mm)=	85.89	85.89	85.89
RUNOFF COEFFICIENT	=	0.99	0.61	0.78

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)=	0.74
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55

0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03
4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03

4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Max.Eff.Inten.(mm/hr)=	105.13	51.06	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.49 (ii)	11.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.29	0.09	
			TOTALS
PEAK FLOW (cms)=	0.11	0.03	0.135 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	84.89	34.48	59.68
TOTAL RAINFALL (mm)=	85.89	85.89	85.89
RUNOFF COEFFICIENT =	0.99	0.40	0.69

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0202):	10.65	2.015	12.25	67.24
+ ID2= 2 (0055):	0.74	0.135	12.25	59.68

ID = 3 (0015):	11.39	2.150	12.25	66.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	2.150	12.25	66.75
OUTFLOW: ID= 1 (0005)	11.390	0.378	12.83	66.67

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.56
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.4059

CALIB			
STANDHYD (0203)	Area (ha)= 2.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 55.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.95	0.65	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	131.66	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

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	1.37	12.250	105.13	18.33	1.55
0.167	0.00	6.250	1.37	12.333	12.38	18.42	1.55
0.250	0.00	6.333	1.55	12.417	12.37	18.50	1.55
0.333	0.94	6.417	1.55	12.500	12.37	18.58	1.55
0.417	0.94	6.500	1.55	12.583	12.37	18.67	1.55
0.500	0.94	6.583	1.55	12.667	12.37	18.75	1.55
0.583	0.94	6.667	1.55	12.750	12.37	18.83	1.55
0.667	0.94	6.750	1.55	12.833	6.36	18.92	1.55
0.750	0.94	6.833	1.55	12.917	6.36	19.00	1.55
0.833	0.94	6.917	1.55	13.000	6.36	19.08	1.55
0.917	0.94	7.000	1.55	13.083	6.36	19.17	1.55
1.000	0.94	7.083	1.55	13.167	6.36	19.25	1.55
1.083	0.94	7.167	1.55	13.250	6.36	19.33	1.55
1.167	0.94	7.250	1.55	13.333	4.64	19.42	1.55
1.250	0.94	7.333	1.89	13.417	4.64	19.50	1.55
1.333	0.94	7.417	1.89	13.500	4.64	19.58	1.55
1.417	0.94	7.500	1.89	13.583	4.64	19.67	1.55
1.500	0.94	7.583	1.89	13.667	4.64	19.75	1.55
1.583	0.94	7.667	1.89	13.750	4.64	19.83	1.55
1.667	0.94	7.750	1.89	13.833	3.61	19.92	1.55
1.750	0.94	7.833	1.89	13.917	3.61	20.00	1.55
1.833	0.94	7.917	1.89	14.000	3.61	20.08	1.55
1.917	0.94	8.000	1.89	14.083	3.61	20.17	1.55
2.000	0.94	8.083	1.89	14.167	3.61	20.25	1.55
2.083	0.94	8.167	1.89	14.250	3.61	20.33	1.03
2.167	0.94	8.250	1.89	14.333	2.58	20.42	1.03
2.250	0.94	8.333	2.23	14.417	2.58	20.50	1.03
2.333	1.12	8.417	2.23	14.500	2.58	20.58	1.03
2.417	1.12	8.500	2.23	14.583	2.58	20.67	1.03
2.500	1.12	8.583	2.23	14.667	2.58	20.75	1.03
2.583	1.12	8.667	2.23	14.750	2.58	20.83	1.03
2.667	1.12	8.750	2.23	14.833	2.58	20.92	1.03
2.750	1.12	8.833	2.40	14.917	2.58	21.00	1.03
2.833	1.12	8.917	2.40	15.000	2.58	21.08	1.03
2.917	1.12	9.000	2.40	15.083	2.58	21.17	1.03
3.000	1.12	9.083	2.40	15.167	2.58	21.25	1.03
3.083	1.12	9.167	2.40	15.250	2.58	21.33	1.03
3.167	1.12	9.250	2.40	15.333	2.58	21.42	1.03
3.250	1.12	9.333	2.75	15.417	2.58	21.50	1.03
3.333	1.12	9.417	2.75	15.500	2.58	21.58	1.03
3.417	1.12	9.500	2.75	15.583	2.58	21.67	1.03
3.500	1.12	9.583	2.75	15.667	2.58	21.75	1.03
3.583	1.12	9.667	2.75	15.750	2.58	21.83	1.03
3.667	1.12	9.750	2.75	15.833	2.58	21.92	1.03
3.750	1.12	9.833	3.09	15.917	2.58	22.00	1.03
3.833	1.12	9.917	3.09	16.000	2.58	22.08	1.03
3.917	1.12	10.000	3.09	16.083	2.58	22.17	1.03

4.000	1.12	10.083	3.09	16.167	2.58	22.25	1.03
4.083	1.12	10.167	3.09	16.250	2.58	22.33	1.03
4.167	1.12	10.250	3.09	16.333	1.55	22.42	1.03
4.250	1.12	10.333	3.95	16.417	1.55	22.50	1.03
4.333	1.37	10.417	3.95	16.500	1.55	22.58	1.03
4.417	1.37	10.500	3.95	16.583	1.55	22.67	1.03
4.500	1.37	10.583	3.95	16.667	1.55	22.75	1.03
4.583	1.37	10.667	3.95	16.750	1.55	22.83	1.03
4.667	1.37	10.750	3.95	16.833	1.55	22.92	1.03
4.750	1.37	10.833	5.33	16.917	1.55	23.00	1.03
4.833	1.37	10.917	5.33	17.000	1.55	23.08	1.03
4.917	1.37	11.000	5.33	17.083	1.55	23.17	1.03
5.000	1.37	11.083	5.33	17.167	1.55	23.25	1.03
5.083	1.37	11.167	5.33	17.250	1.55	23.33	1.03
5.167	1.37	11.250	5.33	17.333	1.55	23.42	1.03
5.250	1.37	11.333	8.25	17.417	1.55	23.50	1.03
5.333	1.37	11.417	8.25	17.500	1.55	23.58	1.03
5.417	1.37	11.500	8.25	17.583	1.55	23.67	1.03
5.500	1.37	11.583	8.25	17.667	1.55	23.75	1.03
5.583	1.37	11.667	8.25	17.750	1.55	23.83	1.03
5.667	1.37	11.750	8.25	17.833	1.55	23.92	1.03
5.750	1.37	11.833	25.42	17.917	1.55	24.00	1.03
5.833	1.37	11.917	25.42	18.000	1.55	24.08	1.03
5.917	1.37	12.000	25.42	18.083	1.55	24.17	1.03
6.000	1.37	12.083	105.12	18.167	1.55	24.25	1.03
6.083	1.37	12.167	105.13	18.250	1.55		

Max.Eff.Inten.(mm/hr)=	105.13	129.31	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.40 (ii)	8.77 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.12	
			TOTALS
PEAK FLOW (cms)=	0.42	0.17	0.591 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	84.89	49.71	69.06
TOTAL RAINFALL (mm)=	85.89	85.89	85.89
RUNOFF COEFFICIENT =	0.99	0.58	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(  0039)|     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   |   0.0900      0.4000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0203)     2.600     0.591     12.25      69.06
   OUTFLOW: ID= 1 (  0039)     2.600     0.026     13.83      68.62

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.35
                  TIME SHIFT OF PEAK FLOW         (min)= 95.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1143
```

```
--------------------
| ADD HYD  (  0035)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):    18.50   0.780    12.67    37.03
     + ID2= 2 (  0030):    65.60   1.239    14.00    35.17
       ==========================================
       ID = 3 (  0035):    84.10   1.591    13.42    35.58

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

```
--------------------
| ADD HYD  (  0035)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0035):    84.10   1.591    13.42    35.58
     + ID2= 2 (  0039):     2.60   0.026    13.83    68.62
       ==========================================
       ID = 1 (  0035):    86.70   1.617    13.42    36.57

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

```
--------------------
| ADD HYD  (  0035)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0035):    86.70   1.617    13.42    36.57
     + ID2= 2 (  0004):    31.57   0.635    13.08    62.15
```



```
       ==========================================
       ID = 3 (  0035):   118.27   2.242    13.33    43.40

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

```
--------------------
| ADD HYD  (  0035)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0035):   118.27   2.242    13.33    43.40
     + ID2= 2 (  0005):    11.39   0.378    12.83    66.67
       ==========================================
       ID = 1 (  0035):   129.66   2.587    13.17    45.45

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

```
************************************************
** SIMULATION:j.25yr 24hr 15min SCS Type II (MTO) **
************************************************

--------------------
|    READ STORM    |    Filename: C:\Users\hbirrell\AppD
|                  |              ata\Local\Temp\
|                  |              9e30d330-4d17-47e0-9893-a88428efbe70\7c784241
| Ptotal= 99.69 mm |    Comments: 25yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.79	12.50	14.36	18.75	1.79
0.25	1.10	6.50	1.79	12.75	7.38	19.00	1.79
0.50	1.10	6.75	1.79	13.00	7.38	19.25	1.79
0.75	1.10	7.00	1.79	13.25	5.38	19.50	1.79
1.00	1.10	7.25	2.19	13.50	5.38	19.75	1.79
1.25	1.10	7.50	2.19	13.75	4.19	20.00	1.79
1.50	1.10	7.75	2.19	14.00	4.19	20.25	1.20
1.75	1.10	8.00	2.19	14.25	2.99	20.50	1.20
2.00	1.10	8.25	2.59	14.50	2.99	20.75	1.20
2.25	1.30	8.50	2.59	14.75	2.99	21.00	1.20
2.50	1.30	8.75	2.79	15.00	2.99	21.25	1.20
2.75	1.30	9.00	2.79	15.25	2.99	21.50	1.20
3.00	1.30	9.25	3.19	15.50	2.99	21.75	1.20
3.25	1.30	9.50	3.19	15.75	2.99	22.00	1.20
3.50	1.30	9.75	3.59	16.00	2.99	22.25	1.20
3.75	1.30	10.00	3.59	16.25	1.79	22.50	1.20
4.00	1.30	10.25	4.59	16.50	1.79	22.75	1.20
4.25	1.60	10.50	4.59	16.75	1.79	23.00	1.20
4.50	1.60	10.75	6.18	17.00	1.79	23.25	1.20

4.75	1.60	11.00	6.18	17.25	1.79	23.50	1.20
5.00	1.60	11.25	9.57	17.50	1.79	23.75	1.20
5.25	1.60	11.50	9.57	17.75	1.79	24.00	1.20
5.50	1.60	11.75	29.51	18.00	1.79		
5.75	1.60	12.00	122.02	18.25	1.79		
6.00	1.60	12.25	14.36	18.50	1.79		

```
--------------------
| CALIB            |
| NASHYD   (  0030)|   Area    (ha)=  65.60   Curve Number   (CN)= 71.8
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.51   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.68

        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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20

2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)=   1.491

PEAK FLOW (cms)= 1.597 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 45.001
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.451

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

CALIB							
NASHYD (0042)	Area (ha)=	6.48	Curve Number (CN)=	71.6			
ID= 1 DT= 5.0 min	Ia (mm)=	5.92	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.41					

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Post-Development

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.453 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 45.198
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.453

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

CALIB							
NASHYD (0043)	Area (ha)=	12.02	Curve Number (CN)=	73.3			
ID= 1 DT= 5.0 min	Ia (mm)=	4.73	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.70					

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.608 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 48.097
TOTAL RAINFALL (mm)= 99.690
RUNOFF COEFFICIENT = 0.482

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

ADD HYD (0001)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0042):	6.48	0.453	12.50	45.20
	+ ID2= 2 (0043):	12.02	0.608	12.83	48.10
	ID = 3 (0001):	18.50	1.000	12.67	47.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (0201)	Area (ha)= 29.60
ID= 1 DT= 5.0 min		Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79

0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20

4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Max.Eff.Inten.(mm/hr)=		122.02	126.98	
	over (min)	5.00	15.00	
Storage Coeff. (min)=		7.11 (ii)	13.52 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.17	0.08	
				TOTALS
PEAK FLOW	(cms)=	4.09	2.15	5.938 (iii)
TIME TO PEAK	(hrs)=	12.25	12.33	12.25
RUNOFF VOLUME	(mm)=	98.69	55.07	74.70
TOTAL RAINFALL	(mm)=	99.69	99.69	99.69
RUNOFF COEFFICIENT	=	0.99	0.55	0.75

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min		Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00

Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20

3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

			TOTALS
Max.Eff.Inten.(mm/hr)=	122.02	63.46	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.15 (ii)	11.62 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.27	0.09	
PEAK FLOW (cms)=	0.33	0.11	0.423 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	98.69	42.94	70.81
TOTAL RAINFALL (mm)=	99.69	99.69	99.69
RUNOFF COEFFICIENT =	0.99	0.43	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0012):	1.97	0.423	12.25	70.81
	+ ID2= 2 (0201):	29.60	5.938	12.25	74.70
	ID = 3 (0016):	31.57	6.361	12.25	74.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	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	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0016)	31.570	6.361	12.25	74.46
OUTFLOW: ID= 1 (0004)	31.570	0.931	12.92	74.39

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.63
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 1.3261

CALIB							
STANDHYD (0202)	Area (ha)= 10.65						
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00		Dir. Conn.(%)= 45.00				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

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	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20

2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

			TOTALS
Max.Eff.Inten.(mm/hr)=	122.02	148.87	
over (min)	5.00	15.00	
Storage Coeff. (min)=	5.23 (ii)	11.25 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.21	0.09	

				TOTALS
PEAK FLOW	(cms)=	1.55	1.00	2.433 (iii)
TIME TO PEAK	(hrs)=	12.25	12.33	12.25
RUNOFF VOLUME	(mm)=	98.69	64.97	80.14
TOTAL RAINFALL	(mm)=	99.69	99.69	99.69
RUNOFF COEFFICIENT	=	0.99	0.65	0.80

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area	(ha)=	0.74
ID= 1 DT= 5.0 min	Total Imp	(%)=	50.00
	Dir. Conn.	(%)=	50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79
0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79

1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20
4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20

5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Max.Eff.Inten.	(mm/hr)=	122.02	65.15
	over (min)	5.00	15.00
Storage Coeff.	(min)=	2.35 (ii)	10.73 (ii)
Unit Hyd. Tpeak	(min)=	5.00	15.00
Unit Hyd. peak	(cms)=	0.30	0.09

				TOTALS
PEAK FLOW	(cms)=	0.13	0.04	0.162 (iii)
TIME TO PEAK	(hrs)=	12.25	12.33	12.25
RUNOFF VOLUME	(mm)=	98.69	44.05	71.36
TOTAL RAINFALL	(mm)=	99.69	99.69	99.69
RUNOFF COEFFICIENT	=	0.99	0.44	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	2.433	12.25	80.14
+ ID2= 2 (0055):		0.74	0.162	12.25	71.36
ID = 3 (0015):		11.39	2.595	12.25	79.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	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	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	2.595	12.25	79.57
OUTFLOW: ID= 1 (0005)	11.390	0.518	12.75	79.49

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.96
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.4709

CALIB			
STANDHYD (0203)	Area	(ha)=	2.60
ID= 1 DT= 5.0 min	Total Imp	(%)=	75.00
	Dir. Conn.	(%)=	55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.60	12.250	122.02	18.33	1.79
0.167	0.00	6.250	1.60	12.333	14.37	18.42	1.79
0.250	0.00	6.333	1.79	12.417	14.36	18.50	1.79
0.333	1.10	6.417	1.79	12.500	14.36	18.58	1.79
0.417	1.10	6.500	1.79	12.583	14.36	18.67	1.79
0.500	1.10	6.583	1.79	12.667	14.36	18.75	1.79
0.583	1.10	6.667	1.79	12.750	14.36	18.83	1.79
0.667	1.10	6.750	1.79	12.833	7.38	18.92	1.79

0.750	1.10	6.833	1.79	12.917	7.38	19.00	1.79
0.833	1.10	6.917	1.79	13.000	7.38	19.08	1.79
0.917	1.10	7.000	1.79	13.083	7.38	19.17	1.79
1.000	1.10	7.083	1.79	13.167	7.38	19.25	1.79
1.083	1.10	7.167	1.79	13.250	7.38	19.33	1.79
1.167	1.10	7.250	1.79	13.333	5.38	19.42	1.79
1.250	1.10	7.333	2.19	13.417	5.38	19.50	1.79
1.333	1.10	7.417	2.19	13.500	5.38	19.58	1.79
1.417	1.10	7.500	2.19	13.583	5.38	19.67	1.79
1.500	1.10	7.583	2.19	13.667	5.38	19.75	1.79
1.583	1.10	7.667	2.19	13.750	5.38	19.83	1.79
1.667	1.10	7.750	2.19	13.833	4.19	19.92	1.79
1.750	1.10	7.833	2.19	13.917	4.19	20.00	1.79
1.833	1.10	7.917	2.19	14.000	4.19	20.08	1.79
1.917	1.10	8.000	2.19	14.083	4.19	20.17	1.79
2.000	1.10	8.083	2.19	14.167	4.19	20.25	1.79
2.083	1.10	8.167	2.19	14.250	4.19	20.33	1.20
2.167	1.10	8.250	2.19	14.333	2.99	20.42	1.20
2.250	1.10	8.333	2.59	14.417	2.99	20.50	1.20
2.333	1.30	8.417	2.59	14.500	2.99	20.58	1.20
2.417	1.30	8.500	2.59	14.583	2.99	20.67	1.20
2.500	1.30	8.583	2.59	14.667	2.99	20.75	1.20
2.583	1.30	8.667	2.59	14.750	2.99	20.83	1.20
2.667	1.30	8.750	2.59	14.833	2.99	20.92	1.20
2.750	1.30	8.833	2.79	14.917	2.99	21.00	1.20
2.833	1.30	8.917	2.79	15.000	2.99	21.08	1.20
2.917	1.30	9.000	2.79	15.083	2.99	21.17	1.20
3.000	1.30	9.083	2.79	15.167	2.99	21.25	1.20
3.083	1.30	9.167	2.79	15.250	2.99	21.33	1.20
3.167	1.30	9.250	2.79	15.333	2.99	21.42	1.20
3.250	1.30	9.333	3.19	15.417	2.99	21.50	1.20
3.333	1.30	9.417	3.19	15.500	2.99	21.58	1.20
3.417	1.30	9.500	3.19	15.583	2.99	21.67	1.20
3.500	1.30	9.583	3.19	15.667	2.99	21.75	1.20
3.583	1.30	9.667	3.19	15.750	2.99	21.83	1.20
3.667	1.30	9.750	3.19	15.833	2.99	21.92	1.20
3.750	1.30	9.833	3.59	15.917	2.99	22.00	1.20
3.833	1.30	9.917	3.59	16.000	2.99	22.08	1.20
3.917	1.30	10.000	3.59	16.083	2.99	22.17	1.20
4.000	1.30	10.083	3.59	16.167	2.99	22.25	1.20
4.083	1.30	10.167	3.59	16.250	2.99	22.33	1.20
4.167	1.30	10.250	3.59	16.333	1.79	22.42	1.20
4.250	1.30	10.333	4.59	16.417	1.79	22.50	1.20
4.333	1.60	10.417	4.59	16.500	1.79	22.58	1.20
4.417	1.60	10.500	4.59	16.583	1.79	22.67	1.20
4.500	1.60	10.583	4.59	16.667	1.79	22.75	1.20
4.583	1.60	10.667	4.59	16.750	1.79	22.83	1.20
4.667	1.60	10.750	4.59	16.833	1.79	22.92	1.20

4.750	1.60	10.833	6.18	16.917	1.79	23.00	1.20
4.833	1.60	10.917	6.18	17.000	1.79	23.08	1.20
4.917	1.60	11.000	6.18	17.083	1.79	23.17	1.20
5.000	1.60	11.083	6.18	17.167	1.79	23.25	1.20
5.083	1.60	11.167	6.18	17.250	1.79	23.33	1.20
5.167	1.60	11.250	6.18	17.333	1.79	23.42	1.20
5.250	1.60	11.333	9.57	17.417	1.79	23.50	1.20
5.333	1.60	11.417	9.57	17.500	1.79	23.58	1.20
5.417	1.60	11.500	9.57	17.583	1.79	23.67	1.20
5.500	1.60	11.583	9.57	17.667	1.79	23.75	1.20
5.583	1.60	11.667	9.57	17.750	1.79	23.83	1.20
5.667	1.60	11.750	9.57	17.833	1.79	23.92	1.20
5.750	1.60	11.833	29.51	17.917	1.79	24.00	1.20
5.833	1.60	11.917	29.51	18.000	1.79	24.08	1.20
5.917	1.60	12.000	29.51	18.083	1.79	24.17	1.20
6.000	1.60	12.083	122.01	18.167	1.79	24.25	1.20
6.083	1.60	12.167	122.02	18.250	1.79		

Max.Eff.Inten.(mm/hr)=	122.02	159.02	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.26 (ii)	7.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.14	
			TOTALS
PEAK FLOW (cms)=	0.48	0.23	0.717 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	98.69	61.33	81.88
TOTAL RAINFALL (mm)=	99.69	99.69	99.69
RUNOFF COEFFICIENT =	0.99	0.62	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 (0203)	2.600	0.717	12.25	81.88
OUTFLOW: ID= 1 (0039)	2.600	0.031	13.83	81.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.26
TIME SHIFT OF PEAK FLOW (min)= 95.00
MAXIMUM STORAGE USED (ha.m.)= 0.1358

ADD HYD (0035) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	1.000	12.67	47.08
+ ID2= 2 (0030):	65.60	1.597	14.00	45.00
ID = 3 (0035):	84.10	2.049	13.42	45.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	2.049	13.42	45.46
+ ID2= 2 (0039):	2.60	0.031	13.83	81.45
ID = 1 (0035):	86.70	2.080	13.42	46.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	2.080	13.42	46.54
+ ID2= 2 (0004):	31.57	0.931	12.92	74.39
ID = 3 (0035):	118.27	2.973	13.25	53.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035) 3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0035):	118.27	2.973	13.25	53.97
+ ID2= 2 (0005):	11.39	0.518	12.75	79.49
ID = 1 (0035):	129.66	3.446	13.08	56.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:k.50yr 24hr 15min SCS Type II (MTO) **
****

READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\b88a903b
Ptotal=112.18 mm	Comments: 50yr 24hr 15min SCS Type II (MTO)

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	2.02	12.50	16.15	18.75	2.02
0.25	1.23	6.50	2.02	12.75	8.30	19.00	2.02
0.50	1.23	6.75	2.02	13.00	8.30	19.25	2.02
0.75	1.23	7.00	2.02	13.25	6.06	19.50	2.02
1.00	1.23	7.25	2.47	13.50	6.06	19.75	2.02
1.25	1.23	7.50	2.47	13.75	4.71	20.00	2.02
1.50	1.23	7.75	2.47	14.00	4.71	20.25	1.35
1.75	1.23	8.00	2.47	14.25	3.37	20.50	1.35
2.00	1.23	8.25	2.92	14.50	3.37	20.75	1.35
2.25	1.46	8.50	2.92	14.75	3.37	21.00	1.35
2.50	1.46	8.75	3.14	15.00	3.37	21.25	1.35
2.75	1.46	9.00	3.14	15.25	3.37	21.50	1.35
3.00	1.46	9.25	3.59	15.50	3.37	21.75	1.35
3.25	1.46	9.50	3.59	15.75	3.37	22.00	1.35
3.50	1.46	9.75	4.04	16.00	3.37	22.25	1.35
3.75	1.46	10.00	4.04	16.25	2.02	22.50	1.35
4.00	1.46	10.25	5.16	16.50	2.02	22.75	1.35
4.25	1.79	10.50	5.16	16.75	2.02	23.00	1.35
4.50	1.79	10.75	6.96	17.00	2.02	23.25	1.35
4.75	1.79	11.00	6.96	17.25	2.02	23.50	1.35
5.00	1.79	11.25	10.77	17.50	2.02	23.75	1.35
5.25	1.79	11.50	10.77	17.75	2.02	24.00	1.35
5.50	1.79	11.75	33.21	18.00	2.02		
5.75	1.79	12.00	137.31	18.25	2.02		
6.00	1.79	12.25	16.15	18.50	2.02		

CALIB					
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8			
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.68				

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35

3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 1.939 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 54.355
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.485

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

CALIB					
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6			
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.41				

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	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35

3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.550 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 54.538
TOTAL RAINFALL (mm)= 112.180
RUNOFF COEFFICIENT = 0.486

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

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| CALIB            |
| NASHYD   (  0043)|   Area    (ha)=  12.02   Curve Number   (CN)= 73.3
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.73   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.70

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


                          ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
   0.083    0.00 | 6.167    1.79 |12.250  137.31 | 18.33    2.02
   0.167    0.00 | 6.250    1.79 |12.333   16.17 | 18.42    2.02
   0.250    0.00 | 6.333    2.02 |12.417   16.15 | 18.50    2.02
   0.333    1.23 | 6.417    2.02 |12.500   16.15 | 18.58    2.02
   0.417    1.23 | 6.500    2.02 |12.583   16.15 | 18.67    2.02
   0.500    1.23 | 6.583    2.02 |12.667   16.15 | 18.75    2.02
   0.583    1.23 | 6.667    2.02 |12.750   16.15 | 18.83    2.02
   0.667    1.23 | 6.750    2.02 |12.833    8.30 | 18.92    2.02
   0.750    1.23 | 6.833    2.02 |12.917    8.30 | 19.00    2.02
   0.833    1.23 | 6.917    2.02 |13.000    8.30 | 19.08    2.02
   0.917    1.23 | 7.000    2.02 |13.083    8.30 | 19.17    2.02
   1.000    1.23 | 7.083    2.02 |13.167    8.30 | 19.25    2.02
   1.083    1.23 | 7.167    2.02 |13.250    8.30 | 19.33    2.02
   1.167    1.23 | 7.250    2.02 |13.333    6.06 | 19.42    2.02
   1.250    1.23 | 7.333    2.47 |13.417    6.06 | 19.50    2.02
   1.333    1.23 | 7.417    2.47 |13.500    6.06 | 19.58    2.02
   1.417    1.23 | 7.500    2.47 |13.583    6.06 | 19.67    2.02
   1.500    1.23 | 7.583    2.47 |13.667    6.06 | 19.75    2.02
   1.583    1.23 | 7.667    2.47 |13.750    6.06 | 19.83    2.02
   1.667    1.23 | 7.750    2.47 |13.833    4.71 | 19.92    2.02
   1.750    1.23 | 7.833    2.47 |13.917    4.71 | 20.00    2.02
   1.833    1.23 | 7.917    2.47 |14.000    4.71 | 20.08    2.02
   1.917    1.23 | 8.000    2.47 |14.083    4.71 | 20.17    2.02
   2.000    1.23 | 8.083    2.47 |14.167    4.71 | 20.25    2.02
   2.083    1.23 | 8.167    2.47 |14.250    4.71 | 20.33    1.35
   2.167    1.23 | 8.250    2.47 |14.333    3.37 | 20.42    1.35
   2.250    1.23 | 8.333    2.92 |14.417    3.37 | 20.50    1.35
   2.333    1.46 | 8.417    2.92 |14.500    3.37 | 20.58    1.35
   2.417    1.46 | 8.500    2.92 |14.583    3.37 | 20.67    1.35
   2.500    1.46 | 8.583    2.92 |14.667    3.37 | 20.75    1.35
   2.583    1.46 | 8.667    2.92 |14.750    3.37 | 20.83    1.35
   2.667    1.46 | 8.750    2.92 |14.833    3.37 | 20.92    1.35
   2.750    1.46 | 8.833    3.14 |14.917    3.37 | 21.00    1.35
   2.833    1.46 | 8.917    3.14 |15.000    3.37 | 21.08    1.35
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   2.917    1.46 | 9.000    3.14 |15.083    3.37 | 21.17    1.35
   3.000    1.46 | 9.083    3.14 |15.167    3.37 | 21.25    1.35
   3.083    1.46 | 9.167    3.14 |15.250    3.37 | 21.33    1.35
   3.167    1.46 | 9.250    3.14 |15.333    3.37 | 21.42    1.35
   3.250    1.46 | 9.333    3.59 |15.417    3.37 | 21.50    1.35
   3.333    1.46 | 9.417    3.59 |15.500    3.37 | 21.58    1.35
   3.417    1.46 | 9.500    3.59 |15.583    3.37 | 21.67    1.35
   3.500    1.46 | 9.583    3.59 |15.667    3.37 | 21.75    1.35
   3.583    1.46 | 9.667    3.59 |15.750    3.37 | 21.83    1.35
   3.667    1.46 | 9.750    3.59 |15.833    3.37 | 21.92    1.35
   3.750    1.46 | 9.833    4.04 |15.917    3.37 | 22.00    1.35
   3.833    1.46 | 9.917    4.04 |16.000    3.37 | 22.08    1.35
   3.917    1.46 |10.000    4.04 |16.083    3.37 | 22.17    1.35
   4.000    1.46 |10.083    4.04 |16.167    3.37 | 22.25    1.35
   4.083    1.46 |10.167    4.04 |16.250    3.37 | 22.33    1.35
   4.167    1.46 |10.250    4.04 |16.333    2.02 | 22.42    1.35
   4.250    1.46 |10.333    5.16 |16.417    2.02 | 22.50    1.35
   4.333    1.79 |10.417    5.16 |16.500    2.02 | 22.58    1.35
   4.417    1.79 |10.500    5.16 |16.583    2.02 | 22.67    1.35
   4.500    1.79 |10.583    5.16 |16.667    2.02 | 22.75    1.35
   4.583    1.79 |10.667    5.16 |16.750    2.02 | 22.83    1.35
   4.667    1.79 |10.750    5.16 |16.833    2.02 | 22.92    1.35
   4.750    1.79 |10.833    6.96 |16.917    2.02 | 23.00    1.35
   4.833    1.79 |10.917    6.96 |17.000    2.02 | 23.08    1.35
   4.917    1.79 |11.000    6.96 |17.083    2.02 | 23.17    1.35
   5.000    1.79 |11.083    6.96 |17.167    2.02 | 23.25    1.35
   5.083    1.79 |11.167    6.96 |17.250    2.02 | 23.33    1.35
   5.167    1.79 |11.250    6.96 |17.333    2.02 | 23.42    1.35
   5.250    1.79 |11.333   10.77 |17.417    2.02 | 23.50    1.35
   5.333    1.79 |11.417   10.77 |17.500    2.02 | 23.58    1.35
   5.417    1.79 |11.500   10.77 |17.583    2.02 | 23.67    1.35
   5.500    1.79 |11.583   10.77 |17.667    2.02 | 23.75    1.35
   5.583    1.79 |11.667   10.77 |17.750    2.02 | 23.83    1.35
   5.667    1.79 |11.750   10.77 |17.833    2.02 | 23.92    1.35
   5.750    1.79 |11.833   33.20 |17.917    2.02 | 24.00    1.35
   5.833    1.79 |11.917   33.21 |18.000    2.02 | 24.08    1.35
   5.917    1.79 |12.000   33.21 |18.083    2.02 | 24.17    1.35
   6.000    1.79 |12.083  137.30 |18.167    2.02 | 24.25    1.35
   6.083    1.79 |12.167  137.31 |18.250    2.02 |

Unit Hyd Qpeak  (cms)=   0.656

PEAK FLOW       (cms)=   0.733 (i)
TIME TO PEAK    (hrs)=  12.833
RUNOFF VOLUME    (mm)=  57.735
TOTAL RAINFALL   (mm)= 112.180
RUNOFF COEFFICIENT   =   0.515
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    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0001)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0042):     6.48   0.550    12.50    54.54
      + ID2= 2 (  0043):    12.02   0.733    12.83    57.73
        ==========================================================
        ID = 3 (  0001):    18.50   1.210    12.67    56.62

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  29.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  45.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      19.24        10.36
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     444.22        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    1.79 |12.250  137.31 | 18.33    2.02
   0.167    0.00 | 6.250    1.79 |12.333   16.17 | 18.42    2.02
   0.250    0.00 | 6.333    2.02 |12.417   16.15 | 18.50    2.02
   0.333    1.23 | 6.417    2.02 |12.500   16.15 | 18.58    2.02
   0.417    1.23 | 6.500    2.02 |12.583   16.15 | 18.67    2.02
   0.500    1.23 | 6.583    2.02 |12.667   16.15 | 18.75    2.02
   0.583    1.23 | 6.667    2.02 |12.750   16.15 | 18.83    2.02
   0.667    1.23 | 6.750    2.02 |12.833    8.30 | 18.92    2.02
   0.750    1.23 | 6.833    2.02 |12.917    8.30 | 19.00    2.02
   0.833    1.23 | 6.917    2.02 |13.000    8.30 | 19.08    2.02
   0.917    1.23 | 7.000    2.02 |13.083    8.30 | 19.17    2.02
   1.000    1.23 | 7.083    2.02 |13.167    8.30 | 19.25    2.02
   1.083    1.23 | 7.167    2.02 |13.250    8.30 | 19.33    2.02
   1.167    1.23 | 7.250    2.02 |13.333    6.06 | 19.42    2.02
   1.250    1.23 | 7.333    2.47 |13.417    6.06 | 19.50    2.02
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   1.333    1.23 | 7.417    2.47 |13.500    6.06 | 19.58    2.02
   1.417    1.23 | 7.500    2.47 |13.583    6.06 | 19.67    2.02
   1.500    1.23 | 7.583    2.47 |13.667    6.06 | 19.75    2.02
   1.583    1.23 | 7.667    2.47 |13.750    6.06 | 19.83    2.02
   1.667    1.23 | 7.750    2.47 |13.833    4.71 | 19.92    2.02
   1.750    1.23 | 7.833    2.47 |13.917    4.71 | 20.00    2.02
   1.833    1.23 | 7.917    2.47 |14.000    4.71 | 20.08    2.02
   1.917    1.23 | 8.000    2.47 |14.083    4.71 | 20.17    2.02
   2.000    1.23 | 8.083    2.47 |14.167    4.71 | 20.25    2.02
   2.083    1.23 | 8.167    2.47 |14.250    4.71 | 20.33    1.35
   2.167    1.23 | 8.250    2.47 |14.333    3.37 | 20.42    1.35
   2.250    1.23 | 8.333    2.92 |14.417    3.37 | 20.50    1.35
   2.333    1.46 | 8.417    2.92 |14.500    3.37 | 20.58    1.35
   2.417    1.46 | 8.500    2.92 |14.583    3.37 | 20.67    1.35
   2.500    1.46 | 8.583    2.92 |14.667    3.37 | 20.75    1.35
   2.583    1.46 | 8.667    2.92 |14.750    3.37 | 20.83    1.35
   2.667    1.46 | 8.750    2.92 |14.833    3.37 | 20.92    1.35
   2.750    1.46 | 8.833    3.14 |14.917    3.37 | 21.00    1.35
   2.833    1.46 | 8.917    3.14 |15.000    3.37 | 21.08    1.35
   2.917    1.46 | 9.000    3.14 |15.083    3.37 | 21.17    1.35
   3.000    1.46 | 9.083    3.14 |15.167    3.37 | 21.25    1.35
   3.083    1.46 | 9.167    3.14 |15.250    3.37 | 21.33    1.35
   3.167    1.46 | 9.250    3.14 |15.333    3.37 | 21.42    1.35
   3.250    1.46 | 9.333    3.59 |15.417    3.37 | 21.50    1.35
   3.333    1.46 | 9.417    3.59 |15.500    3.37 | 21.58    1.35
   3.417    1.46 | 9.500    3.59 |15.583    3.37 | 21.67    1.35
   3.500    1.46 | 9.583    3.59 |15.667    3.37 | 21.75    1.35
   3.583    1.46 | 9.667    3.59 |15.750    3.37 | 21.83    1.35
   3.667    1.46 | 9.750    3.59 |15.833    3.37 | 21.92    1.35
   3.750    1.46 | 9.833    4.04 |15.917    3.37 | 22.00    1.35
   3.833    1.46 | 9.917    4.04 |16.000    3.37 | 22.08    1.35
   3.917    1.46 |10.000    4.04 |16.083    3.37 | 22.17    1.35
   4.000    1.46 |10.083    4.04 |16.167    3.37 | 22.25    1.35
   4.083    1.46 |10.167    4.04 |16.250    3.37 | 22.33    1.35
   4.167    1.46 |10.250    4.04 |16.333    2.02 | 22.42    1.35
   4.250    1.46 |10.333    5.16 |16.417    2.02 | 22.50    1.35
   4.333    1.79 |10.417    5.16 |16.500    2.02 | 22.58    1.35
   4.417    1.79 |10.500    5.16 |16.583    2.02 | 22.67    1.35
   4.500    1.79 |10.583    5.16 |16.667    2.02 | 22.75    1.35
   4.583    1.79 |10.667    5.16 |16.750    2.02 | 22.83    1.35
   4.667    1.79 |10.750    5.16 |16.833    2.02 | 22.92    1.35
   4.750    1.79 |10.833    6.96 |16.917    2.02 | 23.00    1.35
   4.833    1.79 |10.917    6.96 |17.000    2.02 | 23.08    1.35
   4.917    1.79 |11.000    6.96 |17.083    2.02 | 23.17    1.35
   5.000    1.79 |11.083    6.96 |17.167    2.02 | 23.25    1.35
   5.083    1.79 |11.167    6.96 |17.250    2.02 | 23.33    1.35
   5.167    1.79 |11.250    6.96 |17.333    2.02 | 23.42    1.35
   5.250    1.79 |11.333   10.77 |17.417    2.02 | 23.50    1.35
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5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Max.Eff.Inten.(mm/hr)=	137.31	150.34	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.78 (ii)	12.77 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.18	0.08	
			TOTALS
PEAK FLOW (cms)=	4.65	2.63	6.924 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	111.18	65.41	86.01
TOTAL RAINFALL (mm)=	112.18	112.18	112.18
RUNOFF COEFFICIENT =	0.99	0.58	0.77

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)=	1.97	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35

Post-Development

4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Max.Eff.Inten.(mm/hr)=	137.31	76.63	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.01 (ii)	10.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.28	0.09	
			TOTALS
PEAK FLOW (cms)=	0.37	0.13	0.489 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	111.18	51.91	81.54
TOTAL RAINFALL (mm)=	112.18	112.18	112.18
RUNOFF COEFFICIENT =	0.99	0.46	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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Post-Development

ADD HYD (0016)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0012):	1.97	0.489	12.25	81.54
	+ ID2= 2 (0201):	29.60	6.924	12.25	86.01
	ID = 3 (0016):	31.57	7.412	12.25	85.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	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	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0016)	31.570	7.412	12.25	85.73
OUTFLOW: ID= 1 (0004)	31.570	1.215	12.92	85.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.40
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 1.4933

CALIB			
STANDHYD (0202)	Area (ha)=	10.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00

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Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35

3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Max.Eff.Inten.(mm/hr)=	137.31	173.61	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.99 (ii)	10.65 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.22	0.09	
			TOTALS
PEAK FLOW (cms)=	1.76	1.19	2.819 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	111.18	76.23	91.96
TOTAL RAINFALL (mm)=	112.18	112.18	112.18
RUNOFF COEFFICIENT =	0.99	0.68	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02
1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02

2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35
5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35

6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Max.Eff.Inten.(mm/hr)=	137.31	78.54	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.24 (ii)	10.02 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.10	
			TOTALS
PEAK FLOW (cms)=	0.14	0.05	0.187 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	111.18	53.17	82.17
TOTAL RAINFALL (mm)=	112.18	112.18	112.18
RUNOFF COEFFICIENT =	0.99	0.47	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	2.819	12.25	91.96
+ ID2= 2 (0055):		0.74	0.187	12.25	82.17
ID = 3 (0015):		11.39	3.006	12.25	91.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780

0.0210	0.1830	0.6210	0.5180
0.0410	0.2110	0.7130	0.5580
0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	3.006	12.25	91.32
OUTFLOW: ID= 1 (0005)	11.390	0.647	12.75	91.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.53
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.5300

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.95	0.65
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	131.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.79	12.250	137.31	18.33	2.02
0.167	0.00	6.250	1.79	12.333	16.17	18.42	2.02
0.250	0.00	6.333	2.02	12.417	16.15	18.50	2.02
0.333	1.23	6.417	2.02	12.500	16.15	18.58	2.02
0.417	1.23	6.500	2.02	12.583	16.15	18.67	2.02
0.500	1.23	6.583	2.02	12.667	16.15	18.75	2.02
0.583	1.23	6.667	2.02	12.750	16.15	18.83	2.02
0.667	1.23	6.750	2.02	12.833	8.30	18.92	2.02
0.750	1.23	6.833	2.02	12.917	8.30	19.00	2.02
0.833	1.23	6.917	2.02	13.000	8.30	19.08	2.02
0.917	1.23	7.000	2.02	13.083	8.30	19.17	2.02
1.000	1.23	7.083	2.02	13.167	8.30	19.25	2.02
1.083	1.23	7.167	2.02	13.250	8.30	19.33	2.02
1.167	1.23	7.250	2.02	13.333	6.06	19.42	2.02
1.250	1.23	7.333	2.47	13.417	6.06	19.50	2.02
1.333	1.23	7.417	2.47	13.500	6.06	19.58	2.02

1.417	1.23	7.500	2.47	13.583	6.06	19.67	2.02
1.500	1.23	7.583	2.47	13.667	6.06	19.75	2.02
1.583	1.23	7.667	2.47	13.750	6.06	19.83	2.02
1.667	1.23	7.750	2.47	13.833	4.71	19.92	2.02
1.750	1.23	7.833	2.47	13.917	4.71	20.00	2.02
1.833	1.23	7.917	2.47	14.000	4.71	20.08	2.02
1.917	1.23	8.000	2.47	14.083	4.71	20.17	2.02
2.000	1.23	8.083	2.47	14.167	4.71	20.25	2.02
2.083	1.23	8.167	2.47	14.250	4.71	20.33	1.35
2.167	1.23	8.250	2.47	14.333	3.37	20.42	1.35
2.250	1.23	8.333	2.92	14.417	3.37	20.50	1.35
2.333	1.46	8.417	2.92	14.500	3.37	20.58	1.35
2.417	1.46	8.500	2.92	14.583	3.37	20.67	1.35
2.500	1.46	8.583	2.92	14.667	3.37	20.75	1.35
2.583	1.46	8.667	2.92	14.750	3.37	20.83	1.35
2.667	1.46	8.750	2.92	14.833	3.37	20.92	1.35
2.750	1.46	8.833	3.14	14.917	3.37	21.00	1.35
2.833	1.46	8.917	3.14	15.000	3.37	21.08	1.35
2.917	1.46	9.000	3.14	15.083	3.37	21.17	1.35
3.000	1.46	9.083	3.14	15.167	3.37	21.25	1.35
3.083	1.46	9.167	3.14	15.250	3.37	21.33	1.35
3.167	1.46	9.250	3.14	15.333	3.37	21.42	1.35
3.250	1.46	9.333	3.59	15.417	3.37	21.50	1.35
3.333	1.46	9.417	3.59	15.500	3.37	21.58	1.35
3.417	1.46	9.500	3.59	15.583	3.37	21.67	1.35
3.500	1.46	9.583	3.59	15.667	3.37	21.75	1.35
3.583	1.46	9.667	3.59	15.750	3.37	21.83	1.35
3.667	1.46	9.750	3.59	15.833	3.37	21.92	1.35
3.750	1.46	9.833	4.04	15.917	3.37	22.00	1.35
3.833	1.46	9.917	4.04	16.000	3.37	22.08	1.35
3.917	1.46	10.000	4.04	16.083	3.37	22.17	1.35
4.000	1.46	10.083	4.04	16.167	3.37	22.25	1.35
4.083	1.46	10.167	4.04	16.250	3.37	22.33	1.35
4.167	1.46	10.250	4.04	16.333	2.02	22.42	1.35
4.250	1.46	10.333	5.16	16.417	2.02	22.50	1.35
4.333	1.79	10.417	5.16	16.500	2.02	22.58	1.35
4.417	1.79	10.500	5.16	16.583	2.02	22.67	1.35
4.500	1.79	10.583	5.16	16.667	2.02	22.75	1.35
4.583	1.79	10.667	5.16	16.750	2.02	22.83	1.35
4.667	1.79	10.750	5.16	16.833	2.02	22.92	1.35
4.750	1.79	10.833	6.96	16.917	2.02	23.00	1.35
4.833	1.79	10.917	6.96	17.000	2.02	23.08	1.35
4.917	1.79	11.000	6.96	17.083	2.02	23.17	1.35
5.000	1.79	11.083	6.96	17.167	2.02	23.25	1.35
5.083	1.79	11.167	6.96	17.250	2.02	23.33	1.35
5.167	1.79	11.250	6.96	17.333	2.02	23.42	1.35
5.250	1.79	11.333	10.77	17.417	2.02	23.50	1.35
5.333	1.79	11.417	10.77	17.500	2.02	23.58	1.35

5.417	1.79	11.500	10.77	17.583	2.02	23.67	1.35
5.500	1.79	11.583	10.77	17.667	2.02	23.75	1.35
5.583	1.79	11.667	10.77	17.750	2.02	23.83	1.35
5.667	1.79	11.750	10.77	17.833	2.02	23.92	1.35
5.750	1.79	11.833	33.20	17.917	2.02	24.00	1.35
5.833	1.79	11.917	33.21	18.000	2.02	24.08	1.35
5.917	1.79	12.000	33.21	18.083	2.02	24.17	1.35
6.000	1.79	12.083	137.30	18.167	2.02	24.25	1.35
6.083	1.79	12.167	137.31	18.250	2.02		

Max.Eff.Inten.(mm/hr)=	137.31	186.46	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.16 (ii)	6.69 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.31	0.14	
			TOTALS
PEAK FLOW (cms)=	0.55	0.28	0.823 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	111.18	72.16	93.62
TOTAL RAINFALL (mm)=	112.18	112.18	112.18
RUNOFF COEFFICIENT =	0.99	0.64	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.823	12.25	93.62
OUTFLOW: ID= 1 (0039)	2.600	0.035	13.83	93.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.25
TIME SHIFT OF PEAK FLOW (min)= 95.00
MAXIMUM STORAGE USED (ha.m.)= 0.1554

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0001):	18.50	1.210	12.67	56.62
	+ ID2= 2 (0030):	65.60	1.939	14.00	54.35
	ID = 3 (0035):	84.10	2.486	13.42	54.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0035):	84.10	2.486	13.42	54.85
	+ ID2= 2 (0039):	2.60	0.035	13.83	93.19
	ID = 1 (0035):	86.70	2.521	13.42	56.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0035):	86.70	2.521	13.42	56.00
	+ ID2= 2 (0004):	31.57	1.215	12.92	85.66
	ID = 3 (0035):	118.27	3.669	13.17	63.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0035):	118.27	3.669	13.17	63.92
	+ ID2= 2 (0005):	11.39	0.647	12.75	91.24
	ID = 1 (0035):	129.66	4.259	13.00	66.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.


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** SIMULATION:1.100yr 24hr 15min SCS Type II (MTO) **
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READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\2e015ebd
Ptotal=123.37 mm	Comments: 100yr 24hr 15min SCS Type II (MTO)

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	2.22	12.50	17.77	18.75	2.22
0.25	1.36	6.50	2.22	12.75	9.13	19.00	2.22
0.50	1.36	6.75	2.22	13.00	9.13	19.25	2.22
0.75	1.36	7.00	2.22	13.25	6.66	19.50	2.22
1.00	1.36	7.25	2.71	13.50	6.66	19.75	2.22
1.25	1.36	7.50	2.71	13.75	5.18	20.00	2.22
1.50	1.36	7.75	2.71	14.00	5.18	20.25	1.48
1.75	1.36	8.00	2.71	14.25	3.70	20.50	1.48
2.00	1.36	8.25	3.21	14.50	3.70	20.75	1.48
2.25	1.60	8.50	3.21	14.75	3.70	21.00	1.48
2.50	1.60	8.75	3.45	15.00	3.70	21.25	1.48
2.75	1.60	9.00	3.45	15.25	3.70	21.50	1.48
3.00	1.60	9.25	3.95	15.50	3.70	21.75	1.48
3.25	1.60	9.50	3.95	15.75	3.70	22.00	1.48
3.50	1.60	9.75	4.44	16.00	3.70	22.25	1.48
3.75	1.60	10.00	4.44	16.25	2.22	22.50	1.48
4.00	1.60	10.25	5.68	16.50	2.22	22.75	1.48
4.25	1.97	10.50	5.68	16.75	2.22	23.00	1.48
4.50	1.97	10.75	7.65	17.00	2.22	23.25	1.48
4.75	1.97	11.00	7.65	17.25	2.22	23.50	1.48
5.00	1.97	11.25	11.84	17.50	2.22	23.75	1.48
5.25	1.97	11.50	11.84	17.75	2.22	24.00	1.48
5.50	1.97	11.75	36.52	18.00	2.22		
5.75	1.97	12.00	151.00	18.25	2.22		
6.00	1.97	12.25	17.77	18.50	2.22		

CALIB			
NASHYD (0030) ID= 1 DT= 5.0 min	Area (ha)= 65.60	Curve Number (CN)= 71.8	
	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 2.257 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 63.042
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.511

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

CALIB			
NASHYD (0042) ID= 1 DT= 5.0 min	Area (ha)= 6.48	Curve Number (CN)= 71.6	
	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.41		

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.640 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 63.213
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.512

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

CALIB			
NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3	
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.70		

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	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48

3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.849 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 66.656
TOTAL RAINFALL (mm)= 123.370
RUNOFF COEFFICIENT = 0.540

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 (0042):	6.48	0.640	12.50	63.21
+ ID2= 2 (0043):	12.02	0.849	12.83	66.66
ID = 3 (0001):	18.50	1.405	12.67	65.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0201)	Area (ha)= 29.60
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22

2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48

6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Max.Eff.Inten.(mm/hr)=		151.00	171.65	
over (min)		5.00	15.00	
Storage Coeff. (min)=		6.53 (ii)	12.21 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.18	0.09	
				TOTALS
PEAK FLOW	(cms)=	5.15	3.07	7.828 (iii)
TIME TO PEAK	(hrs)=	12.25	12.33	12.25
RUNOFF VOLUME	(mm)=	122.37	74.92	96.27
TOTAL RAINFALL	(mm)=	123.37	123.37	123.37
RUNOFF COEFFICIENT	=	0.99	0.61	0.78

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22

0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48

4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Max.Eff.Inten.(mm/hr)=	151.00	88.86	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.89 (ii)	10.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.28	0.09	
			TOTALS
PEAK FLOW (cms)=	0.41	0.16	0.549 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	122.37	60.27	91.32
TOTAL RAINFALL (mm)=	123.37	123.37	123.37
RUNOFF COEFFICIENT =	0.99	0.49	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):		1.97	0.549	12.25	91.32
+ ID2= 2 (0201):		29.60	7.828	12.25	96.27

ID = 3 (0016): 31.57 8.377 12.25 95.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	8.377	12.25	95.96
OUTFLOW: ID= 1 (0004)	31.570	1.493	12.83	95.89

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.83
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 1.6428

CALIB			
STANDHYD (0202)	Area (ha)= 10.65		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	6.92	3.73	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	266.46	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48

4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Max.Eff.Inten.(mm/hr)=	151.00	195.90	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	10.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.22	0.09	
			TOTALS
PEAK FLOW (cms)=	1.94	1.37	3.171 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	122.37	86.48	102.63
TOTAL RAINFALL (mm)=	123.37	123.37	123.37
RUNOFF COEFFICIENT =	0.99	0.70	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.37	0.37
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	70.24	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22
2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48

2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48
6.083	1.97	12.167	151.00	18.250	2.22		

Max.Eff.Inten.(mm/hr)=		151.00	90.95
	over (min)	5.00	10.00
Storage Coeff. (min)=		2.16 (ii)	9.49 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00
Unit Hyd. peak (cms)=		0.31	0.12

			TOTALS
PEAK FLOW	(cms)=	0.16	0.07	0.222 (iii)
TIME TO PEAK	(hrs)=	12.25	12.25	12.25
RUNOFF VOLUME	(mm)=	122.37	61.66	92.01
TOTAL RAINFALL	(mm)=	123.37	123.37	123.37
RUNOFF COEFFICIENT	=	0.99	0.50	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		10.65	3.171	12.25	102.63
+ ID2= 2 (0055):		0.74	0.222	12.25	92.01
ID = 3 (0015):		11.39	3.393	12.25	101.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	3.393	12.25	101.94
OUTFLOW: ID= 1 (0005)	11.390	0.769	12.67	101.86

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.65
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.5827

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.95	0.65
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	131.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.97	12.250	151.00	18.33	2.22
0.167	0.00	6.250	1.97	12.333	17.78	18.42	2.22
0.250	0.00	6.333	2.22	12.417	17.77	18.50	2.22
0.333	1.36	6.417	2.22	12.500	17.77	18.58	2.22
0.417	1.36	6.500	2.22	12.583	17.77	18.67	2.22
0.500	1.36	6.583	2.22	12.667	17.77	18.75	2.22
0.583	1.36	6.667	2.22	12.750	17.77	18.83	2.22
0.667	1.36	6.750	2.22	12.833	9.13	18.92	2.22
0.750	1.36	6.833	2.22	12.917	9.13	19.00	2.22
0.833	1.36	6.917	2.22	13.000	9.13	19.08	2.22
0.917	1.36	7.000	2.22	13.083	9.13	19.17	2.22
1.000	1.36	7.083	2.22	13.167	9.13	19.25	2.22
1.083	1.36	7.167	2.22	13.250	9.13	19.33	2.22
1.167	1.36	7.250	2.22	13.333	6.66	19.42	2.22
1.250	1.36	7.333	2.71	13.417	6.66	19.50	2.22
1.333	1.36	7.417	2.71	13.500	6.66	19.58	2.22
1.417	1.36	7.500	2.71	13.583	6.66	19.67	2.22
1.500	1.36	7.583	2.71	13.667	6.66	19.75	2.22
1.583	1.36	7.667	2.71	13.750	6.66	19.83	2.22
1.667	1.36	7.750	2.71	13.833	5.18	19.92	2.22
1.750	1.36	7.833	2.71	13.917	5.18	20.00	2.22
1.833	1.36	7.917	2.71	14.000	5.18	20.08	2.22
1.917	1.36	8.000	2.71	14.083	5.18	20.17	2.22
2.000	1.36	8.083	2.71	14.167	5.18	20.25	2.22

2.083	1.36	8.167	2.71	14.250	5.18	20.33	1.48
2.167	1.36	8.250	2.71	14.333	3.70	20.42	1.48
2.250	1.36	8.333	3.21	14.417	3.70	20.50	1.48
2.333	1.60	8.417	3.21	14.500	3.70	20.58	1.48
2.417	1.60	8.500	3.21	14.583	3.70	20.67	1.48
2.500	1.60	8.583	3.21	14.667	3.70	20.75	1.48
2.583	1.60	8.667	3.21	14.750	3.70	20.83	1.48
2.667	1.60	8.750	3.21	14.833	3.70	20.92	1.48
2.750	1.60	8.833	3.45	14.917	3.70	21.00	1.48
2.833	1.60	8.917	3.45	15.000	3.70	21.08	1.48
2.917	1.60	9.000	3.45	15.083	3.70	21.17	1.48
3.000	1.60	9.083	3.45	15.167	3.70	21.25	1.48
3.083	1.60	9.167	3.45	15.250	3.70	21.33	1.48
3.167	1.60	9.250	3.45	15.333	3.70	21.42	1.48
3.250	1.60	9.333	3.95	15.417	3.70	21.50	1.48
3.333	1.60	9.417	3.95	15.500	3.70	21.58	1.48
3.417	1.60	9.500	3.95	15.583	3.70	21.67	1.48
3.500	1.60	9.583	3.95	15.667	3.70	21.75	1.48
3.583	1.60	9.667	3.95	15.750	3.70	21.83	1.48
3.667	1.60	9.750	3.95	15.833	3.70	21.92	1.48
3.750	1.60	9.833	4.44	15.917	3.70	22.00	1.48
3.833	1.60	9.917	4.44	16.000	3.70	22.08	1.48
3.917	1.60	10.000	4.44	16.083	3.70	22.17	1.48
4.000	1.60	10.083	4.44	16.167	3.70	22.25	1.48
4.083	1.60	10.167	4.44	16.250	3.70	22.33	1.48
4.167	1.60	10.250	4.44	16.333	2.22	22.42	1.48
4.250	1.60	10.333	5.67	16.417	2.22	22.50	1.48
4.333	1.97	10.417	5.68	16.500	2.22	22.58	1.48
4.417	1.97	10.500	5.68	16.583	2.22	22.67	1.48
4.500	1.97	10.583	5.67	16.667	2.22	22.75	1.48
4.583	1.97	10.667	5.68	16.750	2.22	22.83	1.48
4.667	1.97	10.750	5.68	16.833	2.22	22.92	1.48
4.750	1.97	10.833	7.65	16.917	2.22	23.00	1.48
4.833	1.97	10.917	7.65	17.000	2.22	23.08	1.48
4.917	1.97	11.000	7.65	17.083	2.22	23.17	1.48
5.000	1.97	11.083	7.65	17.167	2.22	23.25	1.48
5.083	1.97	11.167	7.65	17.250	2.22	23.33	1.48
5.167	1.97	11.250	7.65	17.333	2.22	23.42	1.48
5.250	1.97	11.333	11.84	17.417	2.22	23.50	1.48
5.333	1.97	11.417	11.84	17.500	2.22	23.58	1.48
5.417	1.97	11.500	11.84	17.583	2.22	23.67	1.48
5.500	1.97	11.583	11.84	17.667	2.22	23.75	1.48
5.583	1.97	11.667	11.84	17.750	2.22	23.83	1.48
5.667	1.97	11.750	11.84	17.833	2.22	23.92	1.48
5.750	1.97	11.833	36.51	17.917	2.22	24.00	1.48
5.833	1.97	11.917	36.52	18.000	2.22	24.08	1.48
5.917	1.97	12.000	36.52	18.083	2.22	24.17	1.48
6.000	1.97	12.083	150.99	18.167	2.22	24.25	1.48

	6.083	1.97	12.167	151.00	18.250	2.22	

```
     Max.Eff.Inten.(mm/hr)=     151.00       211.36
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       2.08 (ii)    6.44 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.60         0.32          0.919 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     122.37        82.04        104.22
     TOTAL RAINFALL   (mm)=     123.37       123.37        123.37
     RUNOFF COEFFICIENT   =       0.99         0.67          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  70.0    Ia = Dep. 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(  0039)|     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   |   0.0900     0.4000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0203)      2.600     0.919     12.25     104.22
   OUTFLOW: ID= 1 (  0039)      2.600     0.039     13.83     103.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.24
                  TIME SHIFT OF PEAK FLOW         (min)= 95.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1731

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

--------------------
| ADD HYD  (  0035)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):    18.50   1.405    12.67    65.45
     + ID2= 2 (  0030):    65.60   2.257    14.00    63.04
       ==================================================
```



```
       ID = 3 (  0035):    84.10   2.894    13.33    63.57

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

--------------------
| ADD HYD  (  0035)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0035):    84.10   2.894    13.33    63.57
     + ID2= 2 (  0039):     2.60   0.039    13.83   103.79
       ==================================================
       ID = 1 (  0035):    86.70   2.932    13.33    64.78

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

--------------------
| ADD HYD  (  0035)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0035):    86.70   2.932    13.33    64.78
     + ID2= 2 (  0004):    31.57   1.493    12.83    95.89
       ==================================================
       ID = 3 (  0035):   118.27   4.323    13.08    73.08

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

--------------------
| ADD HYD  (  0035)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0035):   118.27   4.323    13.08    73.08
     + ID2= 2 (  0005):    11.39   0.769    12.67   101.86
       ==================================================
       ID = 1 (  0035):   129.66   5.025    13.00    75.61

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
********************************
** SIMULATION:n.tim           **
********************************

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|    READ STORM    |    Filename: C:\Users\hbirrell\AppD
|                  |              ata\Local\Temp\
|                  |              9e30d330-4d17-47e0-9893-a88428efbe70\9cba3ad4
```



```
| Ptotal=193.00 mm |    Comments: tim
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```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	15.00	3.00	3.00	6.00	43.00	9.00	13.00
1.00	20.00	4.00	5.00	7.00	20.00	10.00	13.00
2.00	10.00	5.00	20.00	8.00	23.00	11.00	8.00

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

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| CALIB            |
| NASHYD   (  0030)|   Area    (ha)=  65.60   Curve Number   (CN)= 71.8
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.51   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.68

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00

2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 3.277 (i)
TIME TO PEAK (hrs)= 9.417
RUNOFF VOLUME (mm)= 121.497
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.630

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

CALIB	
NASHYD (0042)	Area (ha)= 6.48 Curve Number (CN)= 71.6
ID= 1 DT= 5.0 min	Ia (mm)= 5.92 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00

1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.523 (i)
TIME TO PEAK (hrs)= 7.083
RUNOFF VOLUME (mm)= 121.582
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.630

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

CALIB	
NASHYD (0043)	Area (ha)= 12.02 Curve Number (CN)= 73.3
ID= 1 DT= 5.0 min	Ia (mm)= 4.73 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.70

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	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00

0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.845 (i)
TIME TO PEAK (hrs)= 7.333
RUNOFF VOLUME (mm)= 126.233
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.654

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

ADD HYD (0001)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0042):	6.48	0.523	7.08	121.58
+ ID2= 2 (0043):	12.02	0.845	7.33	126.23
ID = 3 (0001):	18.50	1.338	7.25	124.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0201)	Area (ha)= 29.60
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	19.24	10.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	444.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00

1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)=	43.00	56.79	
over (min)	10.00	20.00	
Storage Coeff. (min)=	10.79 (ii)	19.64 (ii)	
Unit Hyd. Tpeak (min)=	10.00	20.00	
Unit Hyd. peak (cms)=	0.11	0.06	
			TOTALS
PEAK FLOW (cms)=	1.59	1.51	3.093 (iii)
TIME TO PEAK (hrs)=	7.00	7.00	7.00
RUNOFF VOLUME (mm)=	192.00	137.29	161.91
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.71	0.84

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD (0012)	Area (ha)= 1.97
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.99	0.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	114.60	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)=	43.00	31.40
over (min)	5.00	20.00
Storage Coeff. (min)=	4.78 (ii)	16.00 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00

Unit Hyd. peak (cms)=	0.22	0.07	
			TOTALS
PEAK FLOW (cms)=	0.12	0.08	0.198 (iii)
TIME TO PEAK (hrs)=	6.92	7.00	7.00
RUNOFF VOLUME (mm)=	192.00	116.99	154.49
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.61	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0012):	1.97	0.198	7.00	154.49
	+ ID2= 2 (0201):	29.60	3.093	7.00	161.91
	ID = 3 (0016):	31.57	3.291	7.00	161.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0016)	31.570	3.291	7.00	161.45

OUTFLOW: ID= 1 (0004)	31.570	1.877	7.58	161.38	

PEAK FLOW REDUCTION [Qout/Qin](%)= 57.04
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 1.8435

CALIB	
STANDHYD (0202)	Area (ha)= 10.65
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.92	3.73
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	266.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00

2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)=	43.00	61.48		
over (min)	10.00	20.00		
Storage Coeff. (min)=	7.94 (ii)	16.51 (ii)		
Unit Hyd. Tpeak (min)=	10.00	20.00		
Unit Hyd. peak (cms)=	0.13	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.57	0.61	1.179 (iii)	
TIME TO PEAK (hrs)=	7.00	7.00	7.00	
RUNOFF VOLUME (mm)=	192.00	152.24	170.13	
TOTAL RAINFALL (mm)=	193.00	193.00	193.00	
RUNOFF COEFFICIENT =	0.99	0.79	0.88	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)= 0.74
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.37	0.37
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	70.24	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)=	43.00	31.92		
over (min)	5.00	15.00		
Storage Coeff. (min)=	3.57 (ii)	14.71 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.26	0.08		
			TOTALS	
PEAK FLOW (cms)=	0.04	0.03	0.075 (iii)	

TIME TO PEAK (hrs)=	6.83	7.00	7.00	
RUNOFF VOLUME (mm)=	192.00	119.06	155.52	
TOTAL RAINFALL (mm)=	193.00	193.00	193.00	
RUNOFF COEFFICIENT =	0.99	0.62	0.81	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	10.65	1.179	7.00	170.13
+ ID2= 2 (0055):	0.74	0.075	7.00	155.52
ID = 3 (0015):	11.39	1.255	7.00	169.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	11.390	1.255	7.00	169.18
OUTFLOW: ID= 1 (0005)	11.390	0.795	7.33	169.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 63.36

TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.5945

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.95	0.65
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	131.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00

2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)=	43.00	67.83	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.43 (ii)	11.67 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.09	
		TOTALS	
PEAK FLOW (cms)=	0.17	0.12	0.291 (iii)
TIME TO PEAK (hrs)=	6.92	7.00	7.00
RUNOFF VOLUME (mm)=	192.00	146.17	171.37
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.76	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	2.600	0.291	7.00	171.37
OUTFLOW: ID= 1 (0039)	2.600	0.066	11.17	170.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.86
TIME SHIFT OF PEAK FLOW (min)=250.00
MAXIMUM STORAGE USED (ha.m.)= 0.2952

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0001):	18.50	1.338	7.25	124.60
	+ ID2= 2 (0030):	65.60	3.277	9.42	121.50
	ID = 3 (0035):	84.10	4.217	9.17	122.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0035):	84.10	4.217	9.17	122.18
	+ ID2= 2 (0039):	2.60	0.066	11.17	170.94
	ID = 1 (0035):	86.70	4.279	9.17	123.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0035):	86.70	4.279	9.17	123.64
	+ ID2= 2 (0004):	31.57	1.877	7.58	161.38
	ID = 3 (0035):	118.27	6.111	9.08	133.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0035):	118.27	6.111	9.08	133.71
	+ ID2= 2 (0005):	11.39	0.795	7.33	169.10
	ID = 1 (0035):	129.66	6.816	9.08	136.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

****
** SIMULATION:p.25mm **
****

READ STORM	Filename: C:\Users\hbirrell\AppData\Local\Temp\9e30d330-4d17-47e0-9893-a88428efbe70\a4c5cea1
Ptotal= 26.26 mm	Comments: 25mm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.10	0.83	30.00	1.67	4.67	2.50	2.37
0.08	2.29	0.92	80.70	1.75	4.23	2.58	2.26
0.17	2.52	1.00	37.00	1.83	3.88	2.67	2.17
0.25	2.81	1.08	20.30	1.92	3.58	2.75	2.08
0.33	3.18	1.17	13.27	2.00	3.33	2.83	2.00
0.42	3.68	1.25	10.09	2.08	3.11	2.92	1.93
0.50	4.39	1.33	8.15	2.17	2.92	3.00	1.93
0.58	5.49	1.42	6.85	2.25	2.76	3.08	1.93
0.67	7.40	1.50	5.92	2.33	2.61	3.17	1.93
0.75	11.54	1.58	5.22	2.42	2.48		

CALIB			
NASHYD (0030)	Area (ha)= 65.60	Curve Number (CN)= 71.8	
ID= 1 DT= 5.0 min	Ia (mm)= 6.51	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.68		

Unit Hyd Qpeak (cms)= 1.491

PEAK FLOW (cms)= 0.162 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 3.263
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.124

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

CALIB			
NASHYD (0042)	Area (ha)= 6.48	Curve Number (CN)= 71.6	
ID= 1 DT= 5.0 min	Ia (mm)= 5.92	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.41		

Unit Hyd Qpeak (cms)= 0.604

PEAK FLOW (cms)= 0.040 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 3.415
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.130

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

CALIB			
NASHYD (0043)	Area (ha)= 12.02	Curve Number (CN)= 73.3	
ID= 1 DT= 5.0 min	Ia (mm)= 4.73	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.70		

Unit Hyd Qpeak (cms)= 0.656

PEAK FLOW (cms)= 0.066 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 4.063
TOTAL RAINFALL (mm)= 26.256
RUNOFF COEFFICIENT = 0.155

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

ADD HYD (0001)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0042):	6.48	0.040	1.58	3.41
	+ ID2= 2 (0043):	12.02	0.066	2.00	4.06
	ID = 3 (0001):	18.50	0.101	1.83	3.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0201)	Area (ha)= 29.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 45.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	19.24	10.36

Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	444.22	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	58.85	12.57	
over (min)	10.00	30.00	
Storage Coeff. (min)=	9.51 (ii)	25.69 (ii)	
Unit Hyd. Tpeak (min)=	10.00	30.00	
Unit Hyd. peak (cms)=	0.12	0.04	
			TOTALS
PEAK FLOW (cms)=	1.55	0.17	1.589 (iii)
TIME TO PEAK (hrs)=	1.08	1.50	1.08
RUNOFF VOLUME (mm)=	25.26	5.56	14.42
TOTAL RAINFALL (mm)=	26.26	26.26	26.26
RUNOFF COEFFICIENT =	0.96	0.21	0.55

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0012)	Area (ha)=	1.97	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.99	0.99	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	114.60	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	80.70	3.64	
over (min)	5.00	35.00	
Storage Coeff. (min)=	3.72 (ii)	30.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.25	0.04	
			TOTALS
PEAK FLOW (cms)=	0.18	0.01	0.181 (iii)
TIME TO PEAK (hrs)=	1.00	1.67	1.00
RUNOFF VOLUME (mm)=	25.26	3.34	14.29
TOTAL RAINFALL (mm)=	26.26	26.26	26.26
RUNOFF COEFFICIENT =	0.96	0.13	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 69.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0016)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0012):	1.97	0.181	1.00	14.29
	+ ID2= 2 (0201):	29.60	1.589	1.08	14.42
	ID = 3 (0016):	31.57	1.712	1.08	14.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0004)	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	0.4210	1.0000
	0.0080	0.0700	0.5630	1.1000
	0.0230	0.1400	0.7190	1.2000
	0.0440	0.3800	0.8890	1.3000
	0.0490	0.4600	1.0710	1.4100
	0.0530	0.5400	1.2650	1.5200
	0.0580	0.6300	1.4690	1.6300
	0.1050	0.7200	1.6840	1.7400
	0.1890	0.8100	1.9080	1.8600
	0.2950	0.9000	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0016)	31.570	1.712	1.08	14.42
OUTFLOW: ID= 1 (0004)	31.570	0.046	3.58	14.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.69
TIME SHIFT OF PEAK FLOW (min)=150.00
MAXIMUM STORAGE USED (ha.m.)= 0.4118

CALIB			
STANDHYD (0202)	Area (ha)=	10.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	6.92	3.73	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	266.46	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	80.70	20.60	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.17 (ii)	19.45 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.19	0.06	
			TOTALS
PEAK FLOW (cms)=	0.72	0.11	0.735 (iii)
TIME TO PEAK (hrs)=	1.00	1.33	1.00
RUNOFF VOLUME (mm)=	25.26	7.61	15.55
TOTAL RAINFALL (mm)=	26.26	26.26	26.26
RUNOFF COEFFICIENT =	0.96	0.29	0.59

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.5 Ia = Dep. 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 (0055)	Area (ha)=	0.74	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.37	0.37	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	70.24	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	80.70	3.79	
over (min)	5.00	30.00	
Storage Coeff. (min)=	2.77 (ii)	28.90 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	

Unit Hyd. peak (cms)=	0.28	0.04	
			TOTALS
PEAK FLOW (cms)=	0.07	0.00	0.074 (iii)
TIME TO PEAK (hrs)=	1.00	1.58	1.00
RUNOFF VOLUME (mm)=	25.26	3.47	14.34
TOTAL RAINFALL (mm)=	26.26	26.26	26.26
RUNOFF COEFFICIENT =	0.96	0.13	0.55

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0015)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	10.65	0.735	1.00	15.55
	+ ID2= 2 (0055):	0.74	0.074	1.00	14.34
	ID = 3 (0015):	11.39	0.809	1.00	15.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0005)	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	0.1220	0.2700
	0.0050	0.0190	0.1750	0.3020
	0.0120	0.0600	0.2360	0.3340
	0.0140	0.0830	0.3020	0.3680
	0.0160	0.1060	0.3740	0.4040
	0.0180	0.1310	0.4520	0.4400
	0.0200	0.1560	0.5340	0.4780
	0.0210	0.1830	0.6210	0.5180
	0.0410	0.2110	0.7130	0.5580
	0.0770	0.2400	0.8080	0.6000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0015)	11.390	0.809	1.00	15.47

OUTFLOW: ID= 1 (0005) 11.390 0.020 3.42 15.39

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.48
TIME SHIFT OF PEAK FLOW (min)=145.00
MAXIMUM STORAGE USED (ha.m.)= 0.1580

CALIB	
STANDHYD (0203)	Area (ha)= 2.60
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.95	0.65	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	131.66	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		80.70	23.47	
over (min)		5.00	20.00	
Storage Coeff. (min)=		2.67 (ii)	15.27 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.29	0.07	
				TOTALS
PEAK FLOW	(cms)=	0.29	0.02	0.293 (iii)
TIME TO PEAK	(hrs)=	1.00	1.33	1.00
RUNOFF VOLUME	(mm)=	25.26	7.52	17.27
TOTAL RAINFALL	(mm)=	26.26	26.26	26.26
RUNOFF COEFFICIENT	=	0.96	0.29	0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 70.0 Ia = Dep. 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(0039)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0900	0.4000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	84.10	0.211	2.92	3.39
+ ID2= 2 (0039):	2.60	0.009	3.25	16.84
ID = 1 (0035):	86.70	0.219	2.92	3.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.101	1.83	3.84
+ ID2= 2 (0030):	65.60	0.162	3.42	3.26
ID = 3 (0035):	84.10	0.211	2.92	3.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	0.211	2.92	3.39
+ ID2= 2 (0039):	2.60	0.009	3.25	16.84
ID = 1 (0035):	86.70	0.219	2.92	3.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	0.219	2.92	3.79
+ ID2= 2 (0004):	31.57	0.046	3.58	14.35
ID = 3 (0035):	118.27	0.264	3.00	6.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)

INFLOW : ID= 2 (0203) (ha) 2.600 (cms) 0.293 (hrs) 1.00 (mm) 17.27
OUTFLOW: ID= 1 (0039) 2.600 0.009 3.25 16.84

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.93
TIME SHIFT OF PEAK FLOW (min)=135.00
MAXIMUM STORAGE USED (ha.m.)= 0.0381

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	18.50	0.101	1.83	3.84
+ ID2= 2 (0030):	65.60	0.162	3.42	3.26
ID = 3 (0035):	84.10	0.211	2.92	3.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	84.10	0.211	2.92	3.39
+ ID2= 2 (0039):	2.60	0.009	3.25	16.84
ID = 1 (0035):	86.70	0.219	2.92	3.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	86.70	0.219	2.92	3.79
+ ID2= 2 (0004):	31.57	0.046	3.58	14.35
ID = 3 (0035):	118.27	0.264	3.00	6.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0035)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0035):	118.27	0.264	3.00	6.61
+ ID2= 2 (0005):	11.39	0.020	3.42	15.39
ID = 1 (0035):	129.66	0.284	3.00	7.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

APPENDIX C
SWM Facility Calculations

CROZIER & ASSOCIATES
Consulting Engineers

Water Quality Requirements
Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

Water Quality Requirements for East SWMF (SWMF1)

Areas Contributing	Area (ha)	% Imp	25mm RV (mm)	25mm RV (m^3)
201	29.60	65.00	14.43	4270
SWMF-1	1.97	50.00	14.29	281
WEIGHTED IMP	**31.57**	**64.06**	**14.42**	**4551**

MOE Total WQ Volume (m^3/ha)	211
MOE ED Volume (m^3/ha)	40
MOE ED Volume (m^3)	1263
MOE PP Volume (m^3/ha)	171
MOE PP Volume (m^3)	5398
Pond Required ED Volume (m^3)	4551
Pond Required PP Volume (m^3)	5398
Available ED Volume (m^3)	4551
Provided PP Volume (m^3)	7650

CROZIER & ASSOCIATES Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

EXTENDED DETENTION SPECIFICATIONS - EAST SWMF (PER MECP)

Extended Detention Volume (Area x runoff from 25 mm storm event)		4551
t (drawdown time - seconds, *hours in italics*)	*48.0*	172800
Ao (cross section area of orifice - sqm)		0.0241
h (maximum water elevation above orifice for extended detention- m)		0.60
C (discharge coefficient)		0.64
Ap (average surface area for extended detention - sqm)		7630

t = 2*Ap*(h^0.5)/(C*Ao*(g*2)^0.5)

Ao = 0.0241284 sqm d = 175 mm

Extended Detention Orifice Diameter (as designed) d = **175** mm

CROZIER & ASSOCIATES
Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: September 29, 2024
By: TM

East SWM Facility (SWMF1)- Stage Storage Outflow Calculations

Outlet Structure Dimensions	
E.D. Orifice Diameter:	0.175 m
E.D. Orifice Invert Elevation:	231.5 m
Rectangular Weir Length:	0.75 m
Rectangular Weir Elev:	232.30 m
Spillway Elev.:	233.50 m
Spillway Bot. Width:	10 m
Trap Side Slopes:	10:1

Pond Dimensions				Outlet Structure Discharge					
Elev. (m)	Depth Above PP (m)	Area (sqm)	Storage Volume (cu.m)	ED Orifice Discharge (cu.m/s)	Rectangular Weir Discharge (cu.m/s)	Spillway Width (m)	Spillway Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
231.50	0.00	6941	0	0.000	0.00	0.00	0.00	0.0000	0.000
231.60	0.10	7171	706	0.008	0.00	0.00	0.00	0.0076	0.07
231.70	0.20	7401	1434	0.023	0.00	0.00	0.00	0.0229	0.14
231.80	0.30	7631	2186	0.031	0.00	0.00	0.00	0.0314	0.22
231.90	0.40	7861	2960	0.038	0.00	0.00	0.00	0.0381	0.30
232.00	0.50	8091	3758	0.044	0.00	0.00	0.00	0.0438	0.38
232.10	0.60	8320	4578	0.049	0.00	0.00	0.00	0.0488	0.46
232.20	0.70	8550	5422	0.053	0.00	0.00	0.00	0.0534	0.54
232.30	0.80	8780	6288	0.058	0.00	0.00	0.00	0.0576	0.63
232.40	0.90	9010	7178	0.061	0.04	0.00	0.00	0.1051	0.72
232.50	1.00	9240	8090	0.065	0.12	0.00	0.00	0.1886	0.81
232.60	1.10	9493	9027	0.069	0.23	0.00	0.00	0.2954	0.90
232.70	1.20	9746	9989	0.072	0.35	0.00	0.00	0.4210	1.00
232.80	1.30	9999	10976	0.075	0.49	0.00	0.00	0.5630	1.10
232.90	1.40	10252	11989	0.078	0.64	0.00	0.00	0.7195	1.20
233.00	1.50	10505	13027	0.081	0.81	0.00	0.00	0.8893	1.30
233.10	1.60	10758	14090	0.084	0.99	0.00	0.00	1.0713	1.41
233.20	1.70	11011	15178	0.087	1.18	0.00	0.00	1.2649	1.52
233.30	1.80	11263	16292	0.089	1.38	0.00	0.00	1.4692	1.63
233.40	1.90	11516	17431	0.092	1.59	0.00	0.00	1.6839	1.74
233.50	2.00	11769	18595	0.094	1.81	0.00	0.00	1.9084	1.86
233.60	2.10	12022	19785	0.097	2.05	10.00	0.58	2.7241	1.98
233.70	2.20	12275	21000	0.099	2.29	10.00	1.65	4.0308	2.10
233.80	2.30	12528	22240	0.101	2.54	10.00	3.02	5.6601	2.22
233.90	2.40	12781	23505	0.104	2.79	10.00	4.65	7.5515	2.35
234.00	2.50	13034	24796	0.106	3.06	10.00	6.51	9.6701	2.48

CROZIER & ASSOCIATES
Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

FOREBAY DESIGN CALCULATIONS - EAST SWMF

	Variable	*Value*
Forebay Settling length	Length of forebay (m)	45.8
	Width of forebay (m)	12.4
	Length-to-width ratio of forebay	3.7
	Peak flow rate from forebay in quality event (m^3/s)	0.046
	Settling velocity (m/s)	0.0003
	Required Forebay length (m)	**24**
Dispersion Length	Inlet flowrate in 5 year event (m^3/s)	3.80
	Depth of the permanent pool in the forebay (m)	1.50
	Desired velocity in the forebay (m/s)	0.5
	Length of dispersion (m)	**41**
Velocity in forebay check	Depth of Forebay in 10 Year Event (m)	2.85
	Cross sectional area (m^2)	59.6
	10yr Flowrate (m^3/s)	5.00
	Velocity in forebay (m/s)*	**0.08**
Forebay Bottom Width	Length of forebay (m)	45.8
	Minimum Forebay Bottom Width (m)	**5.72**
DESIGN FOREBAY LENGTH (m)		**45.8**
DESIGN BOTTOM WIDTH (m)		**12.4**

* Desired maximum average velocity in the forebay is 0.15m/s, per MOE, 2003, Page 4-56

CROZIER & ASSOCIATES
Consulting Engineers

Water Quality Requirements
Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

Water Quality Requirements for West SWMF (SWMF2)

Areas Contributing	Area (ha)	% Imp	25mm RV (mm)	25mm RV (m^3)
202	10.65	65.00	15.55	1656
SWMF-2	0.74	50.00	14.34	106
WEIGHTED IMP	**11.39**	**64.03**	**15.47**	**1762**

MOE Total WQ Volume (m^3/ha)	211
MOE ED Volume (m^3/ha)	40
MOE ED Volume (m^3)	456
MOE PP Volume (m^3/ha)	171
MOE PP Volume (m^3)	1948
Pond Required ED Volume (m^3)	1762
Pond Required PP Volume (m^3)	1948
Available ED Volume (m^3)	1762
Provided PP Volume (m^3)	1953

CROZIER & ASSOCIATES
Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

EXTENDED DETENTION SPECIFICATIONS - West SWMF (PER MECP)

Extended Detention Volume (Area x runoff from 25 mm storm event)		1762
t (drawdown time - seconds, *hours in italics*)	*48.0*	172800
Ao (cross section area of orifice - sqm)		0.0087
ɳ (maximum water elevation above orifice for extended detention- m)		0.69
C (discharge coefficient)		0.64
Ap (average surface area for extended detention - sqm)		2661

t = 2*Ap*(h^0.5)/(C*Ao*(g*2)^0.5)

Ao = 0.00902486 sqm d = 107 mm

Extended Detention Orifice Diameter (as designed) d = **105** mm

CROZIER & ASSOCIATES
Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

West SWM Facility Pond Stage Storage Outflow Calculations

Outlet Structure Dimensions	
E.D. Orifice Diameter:	0.105 m
E.D. Orifice Invert Elevation:	228.5 m
Rectangular Weir Length:	0.32 m
Rectangular Weir Elev:	229.30 m
Spillway Elev.:	230.50 m
Spillway Bot. Width:	10 m
Trap Side Slopes:	10:1

Pond Dimensions				Outlet Structure Discharge					
Elev. (m)	Depth Above PP (m)	Area (sqm)	Storage Volume (cu.m)	ED Orifice Discharge (cu.m/s)	Rectangular Weir Discharge (cu.m/s)	Spillway Width (m)	Spillway Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
228.50	0.00	1849	0	0.000	0.00	0.00	0.00	0.000	0.000
228.60	0.10	1959	190	0.005	0.00	0.00	0.00	0.005	0.019
228.70	0.20	2069	392	0.009	0.00	0.00	0.00	0.009	0.039
228.80	0.30	2180	604	0.012	0.00	0.00	0.00	0.012	0.060
228.90	0.40	2290	828	0.014	0.00	0.00	0.00	0.014	0.083
229.00	0.50	2400	1062	0.016	0.00	0.00	0.00	0.016	0.106
229.10	0.60	2510	1308	0.018	0.00	0.00	0.00	0.018	0.131
229.20	0.70	2620	1564	0.020	0.00	0.00	0.00	0.020	0.156
229.30	0.80	2731	1832	0.021	0.00	0.00	0.00	0.021	0.183
229.40	0.90	2841	2110	0.023	0.02	0.00	0.00	0.041	0.211
229.50	1.00	2951	2400	0.024	0.05	0.00	0.00	0.077	0.240
229.60	1.10	3081	2702	0.025	0.10	0.00	0.00	0.122	0.270
229.70	1.20	3211	3016	0.026	0.15	0.00	0.00	0.175	0.302
229.80	1.30	3342	3344	0.027	0.21	0.00	0.00	0.236	0.334
229.90	1.40	3472	3685	0.028	0.27	0.00	0.00	0.302	0.368
230.00	1.50	3602	4038	0.030	0.34	0.00	0.00	0.374	0.404
230.10	1.60	3732	4405	0.031	0.42	0.00	0.00	0.452	0.440
230.20	1.70	3862	4785	0.032	0.50	0.00	0.00	0.534	0.478
230.30	1.80	3993	5177	0.032	0.59	0.00	0.00	0.621	0.518
230.40	1.90	4123	5583	0.033	0.68	0.00	0.00	0.713	0.558
230.50	2.00	4253	6002	0.034	0.77	0.00	0.00	0.808	0.600
230.60	2.10	4383	6434	0.035	0.87	10.00	0.58	1.490	0.643
230.70	2.20	4513	6879	0.036	0.98	10.00	1.65	2.657	0.688
230.80	2.30	4644	7336	0.037	1.08	10.00	3.02	4.142	0.734
230.90	2.40	4774	7807	0.038	1.19	10.00	4.65	5.884	0.781
231.00	2.50	4904	8291	0.038	1.31	10.00	6.51	7.849	0.829

CROZIER & ASSOCIATES
Consulting Engineers

Project #: 1935-6133
Project: Hawk Ridge
Date: 2024.09.30
By: TM

FOREBAY DESIGN CALCULATIONS - West SWMF (SWMF2)

	Variable	*Value*
Forebay Settling length	Length of forebay (m)	20.0
	Width of forebay (m)	8.7
	Length-to-width ratio of forebay	2.3
	Peak flow rate from forebay in quality event (m^3/s)	0.020
	Settling velocity (m/s)	0.0003
	Required Forebay length (m)	**12**
Dispersion Length	Inlet flowrate in 5 year event (m^3/s)	1.77
	Depth of the permanent pool in the forebay (m)	1.50
	Desired velocity in the forebay (m/s)	0.5
	Length of dispersion (m)	**19**
Velocity in forebay check	Depth of Forebay in 10 Year Event (m)	3.01
	Cross sectional area (m^2)	53.4
	10yr Flowrate (m^3/s)	2.15
	Velocity in forebay (m/s)*	**0.04**
Forebay Bottom Width	Length of forebay (m)	20.0
	Minimum Forebay Bottom Width (m)	**2.50**
DESIGN FOREBAY LENGTH (m)		**20.0**
DESIGN BOTTOM WIDTH (m)		**8.7**

* Desired maximum average velocity in the forebay is 0.15m/s, per MOE, 2003, Page 4-56

FIGURES

Legend

PROPERTY LINE

Project

HAWK RIDGE GOLF COURSE
TOWNSHIP OF SEVERN

Drawing

SITE LOCATION

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
T.M.	T.M.	1935-6133

Scale	Date	Check By	Drawing
N.T.S.	2024.01.11	B.H.	FIGURE 1

LEGEND

- SINGLE
- TOWNHOUSES
- GOLF VILLA
- PARKLAND AND OPEN SPACE
- SWM POND
- BUFFER
- NHS
- TREATMENT PLANT / UTILITIES
- FOREST
- WOODLAND
- MIXED MEADOW - MEMM3
- POND (BASKING TURTLE HABITAT/SURVEY)
- POND
- 30m BUFFER TO WATERCOURSE
- BLACK ASH LOCATION
- WATERCOURSE
- FLOODPLAIN LINE
- PROPOSED FLOODPLAIN ADJUSTMENT FOR NEW DEVELOPABLE AREA
- SITE BOUNDARY

Treatment Plant 0.97ha
SWM Pond 0.74ha
Park 0.56ha
SWM Pond 1.97 ha
Well Pump House 0.20ha
Golf Villas 0.74 ha
Golf Villas 1.66 ha
Entry Feature
Park 0.91 ha
Existing Golf Club
Entry Feature
Existing Golf Course/NHS
Golf Villas 1.68 ha
Park 0.16 ha
Park 0.39 ha
Water Tower 028ha

Schedule of Land Use

Description	Residential Units	Area (ha
Single detached	290	11.95
Total Single Detached	**290**	**11.95**
Townhouses	310	6.65
Golf Villas (Stacked Townhouses)	250	4.05
Net Developable Total	**850**	**22.65**
Stormwater Management Pond		2.70
Parkland and Trails		2.17
Buffer		0.25
Natural Heritage System		3.92
Right of Way		9.29
Treatment Plant		0.97
Utility		0.20
Water Tower		0.28
Golf Course		83.15
Total Site Area		**125.58**

C:\Users\mpettigrew\The Biglieri Group\TBG_Project - 2020-2024\2023\23979\2 - TBG Design\1 - TBG Working Drawings\1 - AutoCAD\2024-08\23979_DP_24.08.22

CONCEPT DRAFT PLAN

ADDRESS: HAWKRIDGE GOLF COURSE

Project No: 23979

Scale: 1:2500

August 22, 2024

Designed By: MP

Urbantypology Jeff Mingay GOLF COURSE ARCHITECT

BIGLIERI GROUP

LEGEND

- PROPERTY LINE
- CATCHMENT AREA ID
- CURVE NUMBER
- DRAINAGE AREA (ha)
- OVERLAND FLOW DIRECTION
- x 215.00 EXISTING GRADE
- XXX.X EX. CONTOUR
- INTERNAL CATCHMENT AREA
- EXTERNAL CATCHMENT AREA

EXT-2: 6.48 | 71.6

EXT-1: 12.02 | 73.3

101: 40.48 | 67.1

103: 65.15 | 71.4

102: 5.53 | 69.6

100 0m 100 200
SCALE: 1:3000

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SATELLITE LiDAR TOPOGRAPHY DATA (DATED SPRING, 2002) PURCHASED FROM FIRST BASE MAPPING SOLUTIONS ON FEBRUARY 1st 2023

Township of SEVERN

No.	ISSUE	DATE: YYYY/MM/DD
0	ISSUED FOR CLIENT COORDINATION	2024/09/16
1	ISSUED FOR FIRST SUB OFFICIAL PLAN AMENDMENT	2024/09/30

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

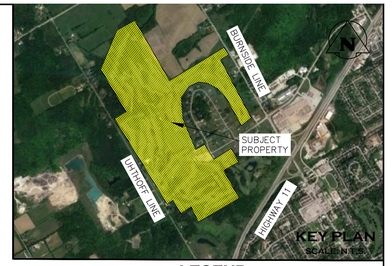
Engineer

Project: HAWK RIDGE DEVELOPMENT
SEVERN, ONTARIO

Drawing: PRE-DEVELOPMENT CATCHMENT PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
T.M.	T.M./H.B.	1935-6133
Check By B.H/N.O.C	Check By B.H/N.O.C	Drawing FIGURE 3



LEGEND

- PROPERTY LINE
- CATCHMENT AREA ID
- CURVE NUMBER (NASHYD)
- PERCENT IMPERVIOUS (STANHYD)
- DRAINAGE AREA (ha)
- OVERLAND FLOW DIRECTION
- x 215.00 EXISTING GRADE
- XXX.X EX. CONTOUR
- INTERNAL CATCHMENT AREA
- EXTERNAL CATCHMENT AREA
- CONSOLIDATED DEVELOPMENT CONSTRAINT LINE
- WATERCOURSE CENTERLINE

EXT–2: 6.48 | 71.6

EXT–1: 12.02 | 73.3

204: 65.60 | 71.8

SWMF–1: 1.97 | 50.0%

SWMF–2: 0.74 | 50.0%

201: 29.60 | 65.0%

202: 10.65 | 65.0%

203: 2.60 | 65.0%

HIGH PRESSURE GAS MAIN EASEMENT

DEVELOPMENT CONSTRAINT LINES

EXISTING WATERCOURSE

PR. RET.WALL

Existing Golf Courselnks

Existing Golf Club

SWM Pond 1.97 ha

Park 0.39 ha

Golf Villas 1.63 ha

Park 0.91 ha

Treatment Train 0.97ha

Park 0.80ha

Golf Villas 0.74 ha

Well Pump House 20sq

Water Tower 0.28ha

100 0m 100 200

SCALE: 1:3000

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Township of SEVERN

No.	ISSUE	DATE: YYYY/MM/DD
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Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project: HAWK RIDGE DEVELOPMENT
SEVERN, ONTARIO

Drawing: POST–DEVELOPMENT CATCHMENT PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
T.M.	T.M./H.B.	1935–6133
Check By B.H/N.O.C	Check By B.H/N.O.C	Drawing FIGURE 4

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- ×215.00 EXISTING GRADE
- ×215.00 MATCH EXISTING GRADE
- ×215.00 PROPOSED GRADE
- ×LP.215.00 PROPOSED LOW POINT GRADE
- ×HP.215.00 PROPOSED HIGH POINT GRADE
- 1.2% PROPOSED MINOR OVERLAND DRAINAGE
- 1.2m PROPOSED ELEVATION DIFFERENCE
- PROPOSED MAJOR OVERLAND FLOW DIRECTION
- EXISTING FLOODPLAIN (CROZIER)
- CONSOLIDATED DEVELOPMENT CONSTRAINT LINE (CROZIER)
- 30m WATERCOURSE SETBACK (AZIMUTH)
- PROPOSED STORM SEWER

EMERGENCY SPILLWAY
MW9
GW = 231.91
BOTTOM OF POND 230
PP 231.50
ED 232.11
HWL 233.50
TOP OF BERM 234
ACCESS ROAD
TOP OF BERM =231.55
MW10
GW = 236.04
OUTLET CONTROL STRUCTURE
OUTLET PIPE
OUTLET HEADWALL
OUTLET TO FLOODPLAIN
INLET HEADWALL
234.89
234.66
0.5%
LP 234.50
10 0m 10 20 30 40
SCALE: 1:500

POND VOLUME	
TOTAL VOLUME	32316 m^3
ACTIVE VOLUME	24666 m^3
DEAD VOLUME	7650 m^3

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Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

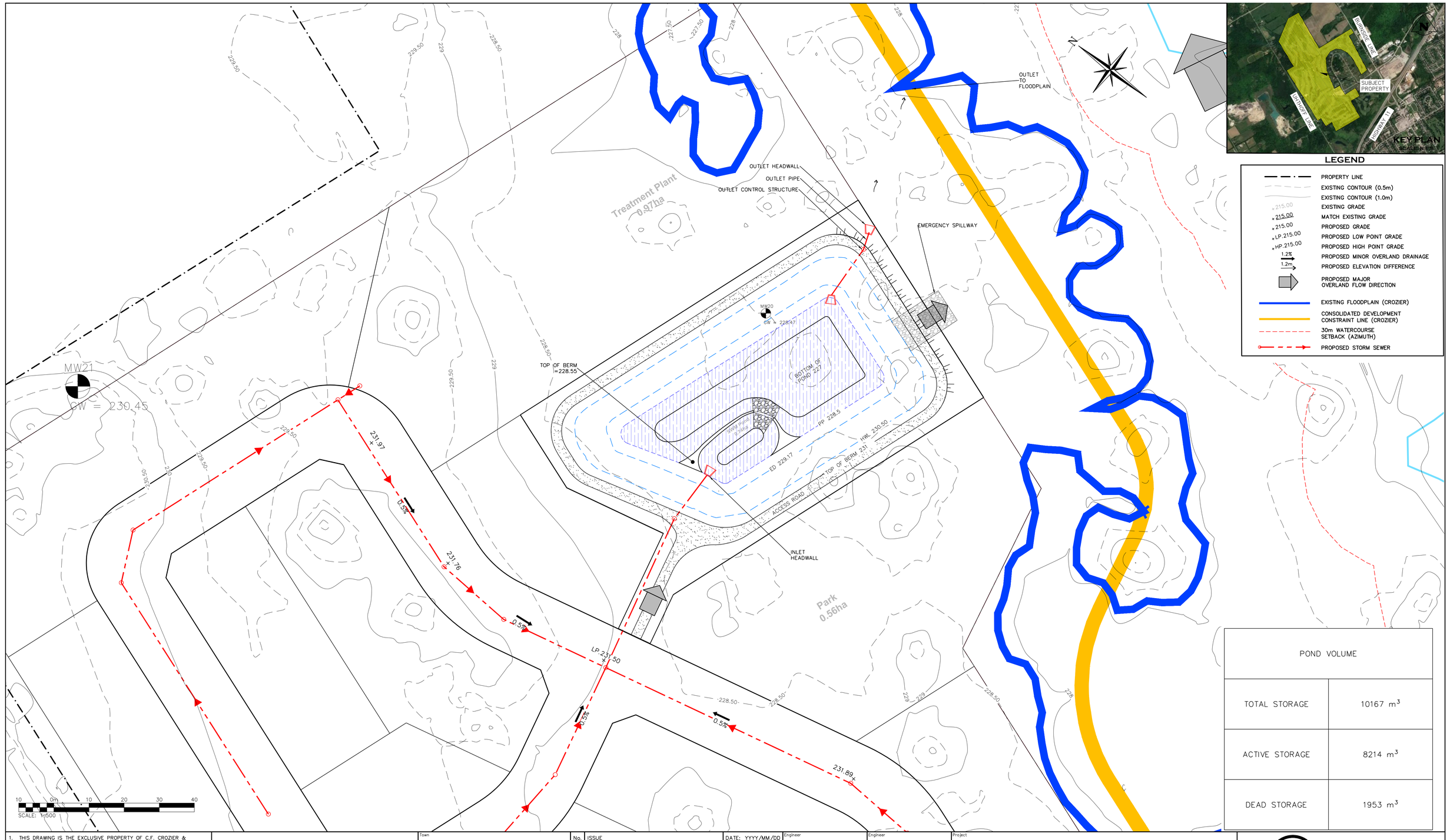
Engineer

Project
HAWK RIDGE DEVELOPMENT
SEVERN, ONTARIO

Drawing
PRELIMINARY EAST POND DESIGN (SWMF #1)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
T.M.	H.B./T.M.	1935-6133
Check By	Check By	Drawing
H.B./B.H.	B.H.	FIGURE 5



POND VOLUME	
TOTAL STORAGE	10167 m^3
ACTIVE STORAGE	8214 m^3
DEAD STORAGE	1953 m^3

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HAWK RIDGE DEVELOPMENT
SEVERN, ONTARIO

PRELIMINARY WEST POND DESIGN (SWMF #2)

CROZIER CONSULTING ENGINEERS

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T.M.	H.B./T.M.	1935-6133
Check By	Check By	Drawing
H.B./B.H.	B.H.	FIGURE 6