Functional Servicing and Preliminary Stormwater Management Report

West Ridge Trailside
Neighborhood Plan Area

City of Orillia
County of Simcoe

PEARSON ENGINEERING

PEARSONENG.COM

Prepared for Charter Development LP

February 2023

12012.27

Table of Contents

1. INTRODUCTION 1

1.1. Background Information 1

2. SUPPORTING DOCUMENTS 2

3. DESIGN POPULATION 2

4. WATER SUPPLY AND DISTRIBUTION 4

5. SANITARY SERVICING 4

5.1. Sanitary Design Criteria 4

6. STORMWATER MANAGEMENT 5

6.1. Overview 5
6.2. Analysis Methodology 6
6.3. The City of Orillia Official Plan 6
6.4. Existing Drainage Conditions 6
6.5. Proposed Drainage Conditions 7
6.6. Champlain SWM Pond 8
6.7. Bass Lake SWM Pond 9
6.8. Proposed New SWM Pond 10
6.9. Quality Control 11
6.10. Low Impact Development 12
6.11. Oro and Hawkestone Creeks Subwatershed Plan 12

7. WATER BALANCE 13

8. PHOSPHORUS BUDGET 14

9. TRANSCANADA PIPELINE 15

10. SECONDARY UTILITIES 15

11. CONCLUSIONS 16

Appendices

Appendix A – Water Calculations and Supporting Documents

Appendix B – Sanitary Calculations and Supporting Documents

Appendix C – Stormwater Management Calculations and Supporting Documents

Appendix D – Sewer Design Sheets

Appendix E – Pre-Development Visual OTTHYMO Modeling

Appendix F – Post-Development Visual OTTHYMO Modeling

Appendix H – Letters to Secondary Utilities

Appendix I – Pearson Engineering Drawings

List of Figures & Drawings

Figure 1 – Site Location Plan

Figure 2 – Watermain and Sanitary Servicing Layout

Figure 3 – Storm Servicing Layout & Centerline Road Elevations

Figure 4 – Post Development Storm Catchment Plan

Figure 5 – Sanitary Catchment Plan

Figure 6 – Watermain and WaterCAD Modelling Layout

Dwg. No. STM-1 – Pre-Development Storm Drainage Plan (by RG Robinson and Associates)

Dwg. No. ULT – Ultimate Water Model (by RG Robinson and Associates)

Functional Servicing Report
Charter Development LP – West Orillia Neighborhood

1. Introduction

PEARSON Engineering Ltd. (PEARSON) has been retained by Charter Development LP (Client) to prepare a Functional Servicing Report and Preliminary Stormwater Management Report (FSR) in support of the proposed West Ridge Trailside Neighborhood Plan Area (Project Lands) located on Part of Lot 6, 7 and part of 8, Concession 2 the City of Orillia (City), Simcoe County. This FSR is provided to the City in support of the Re-zoning and Draft Plan Approval.

The Project Lands comprise of a total area of approximately 110.47 hectares, to be developed into a mix of land uses including residential, commercial, institutional, and environmental protection lands. The Project Lands are located north of the Lakehead University lands, east of Line 15 North, south of Bass Lake Side Road East, and west of the existing Stone Ridge Subdivision. The Project Lands are currently used for agricultural purposes, with two occupied residential buildings on the properties and contains the existing Bass Lake Stormwater Management (SWM) Pond.

The Project will connect to existing municipal services located within the Stone Ridge Subdivision. Refer to Figure 1 – Site Location Plan.

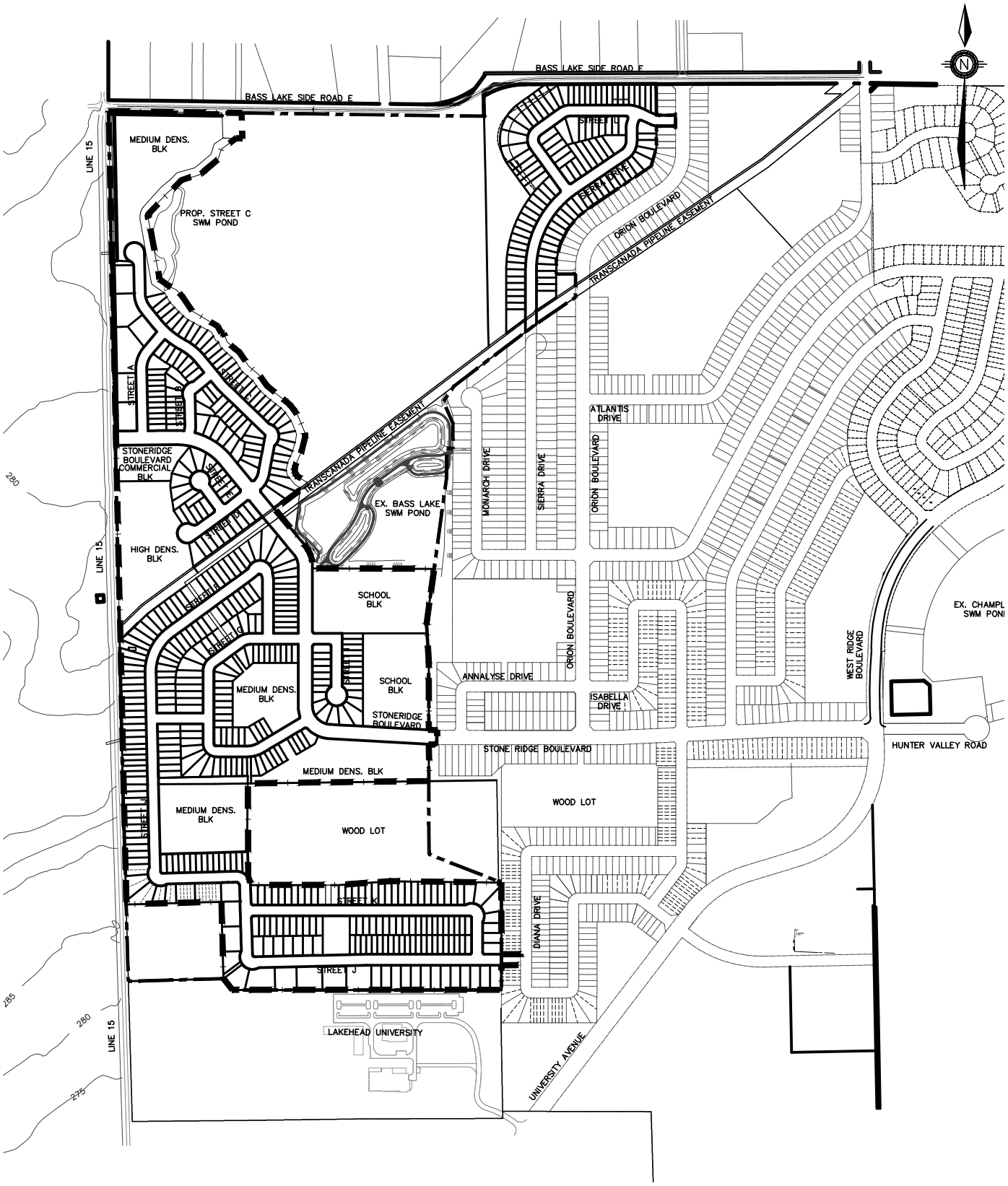
This FSR assesses the required municipal services to support development of the Project Lands, complete with preliminary grading and servicing design and associated calculations.

1.1. Background Information

The Stone Ridge Subdivision was originally designed by RG Robinson and Associates/TSH Engineers/AECOM (AECOM) and those designs received approvals in 2005 and 2007. Construction of the Stone Ridge Subdivision commenced shortly after approvals were obtained and has been progressing in phases. Currently Phase 9 is under construction, leaving only Phase 10 (approximately 55 units) to complete build out of the subdivision.

Municipal servicing design of the Stone Ridge Subdivision considered the future development of the Project Lands. Sanitary, water and storm services were sized and extended to the west boundary of the Stone Ridge Subdivision. The Champlain SWM Pond was completed in 2017 and has capacity for the tributary area from the Project Lands. Similarly, the Bass Lake SWM Pond was completed in 2016 and has capacity to service the tributary area from the Project Lands. A new pond will be required to be designed and built in the north west portion of the Project lands to service approximately 9.0 ha of Project lands.

The Project Lands are entirely within Zone 3 of the City of Orillia's water pressure system. A booster pumping station was constructed in 2018 to service all of Zone 3 and is located on Emperor Drive within the Stone Ridge Subdivision.



CHARTER WEST LANDS
CHARTER CONSTRUCTION

SITE LOCATION PLAN

PEARSON ENGINEERING LTD.
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DESIGNED BY	IR	HORIZ SCALE	1:10000	PROJECT #	12012.27
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2. Supporting Documents

The following documents have been referenced in the preparation of this report:

- Ministry of the Environment, Design Guidelines for Sewage Works – 2008
- Ministry of the Environment, Design Guidelines for Drinking-Water Systems - 2008
- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003.
- City of Orillia, Engineering Design Criteria, February 2015
- TSH Associates, Water Servicing Report Stone Ridge Subdivision, March 2005
- TSH Associates, Stormwater Management Report Stone Ridge Subdivision, July 2005
- TSH Associates, Stormwater Management Report Stone Ridge Subdivision Phase 2, April 2007
- The City of Orillia Official Plan, March 2010
- City of Orillia Comprehensive Stormwater Management Master Plan, February 2016

3. Design Population

Development of the Project Lands will consist of a total of 1,290 residential units, two school sites, a local commercial block, parkland, Environmental Protected areas, open space blocks and applicable roads and walkways.

The proposed residential development is composed of various single-family home lot sizes, townhouse blocks, medium and high-density residential blocks, commercial, parkland and schools as per Table 1 below.

Table 1: Land Use Area Schedule

Land Use	Area (ha)	Units
Single Detached		
10m Frontage	8.18	207
12m Frontage	16.77	327
Townhouse Block	2.48	84
Semi	2.88	70
Medium Density Blocks	8.51	383
High Density Blocks	1.99	219
Open Space	1.06	8
Block	0.06	---
School (Public)	4.47	2
Commercial	0.50	1
Green Field	3.95	1
ROW	12.62	---
EP	39.98	6
TC Energy	3.07	6
Walkway Servicing	0.19	4
Widening	0.89	4
TOTAL	**107.61**	**1,290**

*Number of units based on 90 units/net ha as set out in the Orillia Official Plan
**Number of units based on 45 units/net ha as set out in the Orillia Official Plan

The following design populations have been calculated for the determination of the servicing requirements for this project:

Proposed Lots: Residential = 1,290 units
Residential Unit Population = 2.95 ppl/unit
Commercial = 0.50 ha
Commercial Population = 31.75 people/ha
Institutional = 4.47 ha
Institutional Population = 43.00 people/ha

The proposed Charter – West Lands Project Population:

Pop. Single Detached = 1,290 x 2.95 = 3,806 people
Pop. Commercial = 0.50 x 31.75 = 16 people
Pop. Institutional = 4.47 x 43.00 = 192 people

Therefore, the projected design population of the Project is 4,014 people. Refer to Appendix B and Appendix C for more detailed calculations.

4. Water Supply and Distribution

The design of the Stone Ridge subdivision and the Zone 3 Booster station included preliminary land use and watermain layout for the Project Lands. This water model (provided by the City of Orillia) has been updated to reflect the current Project Lands land use and layout to model the proposed water distribution system that is required to provide domestic and fire flows.

The total design population of the Project lands is 4,014 people. Utilizing the City of Orillia Guidelines, a domestic water use of 300 L/capita/day was used. The Average Day Demand (ADD) is estimated at 15.09 L/s. A Peak Rate factor of 4.50 was used in calculating the Peak Hour Demand (PHD) of 67.90 L/s for the Project lands. The PHD calculated was divided amongst the junctions in the water model, and therefore, a residential domestic water demand of 1.16 L/s was utilized in the water modeling. Point loads were also utilized in the water model for the medium density blocks, high density blocks, commercial, and institutional land uses. Furthermore, Fire Flow capacity of 100 L/s is required in the water distribution system throughout the Project lands.

Water supply for the Project Lands will be from two existing watermains at the west limit of the Stone Ridge subdivision and a third connection at Sierra Drive (at the Trans Canada pipeline). A 300 mm diameter main at the west limit of Stone Ridge Boulevard and a 400 mm diameter watermain immediately west of Monarch Drive, next to the southeast corner of the Bass Lake SWM Pond will service most of the Project Lands. The area in the northeast corner of the Project Lands, comprised mostly by extension of existing Sierra Drive northerly to Orion Boulevard, will be serviced by extending the 150 mm watermain north and connecting to the 300 mm watermain on Orion. Refer to the servicing drawings in Appendix G for the water distribution system and watermain sizes.

It should be noted that a watermain is proposed from Stone Ridge Boulevard through the woodlot southerly to Street B, which is required since approximately 315 units, south of the woodlot, will be serviced by a single watermain on Street B. Diana Drive is within pressure Zone 2 and as a result water from Diana cannot feed into Trailside Road. A secondary feed to these units is proposed by providing a 200 mm watermain through the wood lot as shown on Drawing 2. The location of this watermain is approximate and based on a site walk. It is estimated that the installation will have minimal impact to the vegetation.

All proposed Blocks (medium density, high density, commercial and school) will have internal water distribution design to provide adequate domestic supply and firefighting coverage. All subdivision roads within the Project lands will have fire hydrants spaced at the maximum intervals of 150 m as per City Standards.

The updated water model shows that all pressures within the Project Lands are within acceptable limits for the projected water demand. Water Modeling output and supporting calculations can be found in Appendix A.

5. Sanitary Servicing

5.1. Sanitary Design Criteria

The design of the Stone Ridge Subdivision and the Champlain Sewage Pumping Station included preliminary land use and sanitary sewer layout (and inverts) for the Project Lands. The Project Lands will have a total population of 4,014 persons. Utilizing the City of Orillia domestic sewer use of 300 L/capita/day, an Average Daily Flow (ADF) of 15.09 L/s is calculated. Using a Peaking Factor of 3.30, and allowing for infiltration, a Peak Flow of 82.56 L/s is calculated for the Project Lands.

The Project Lands will be serviced by sanitary sewers connecting to existing manholes located in the Stone Ridge subdivision as follows:

- Diana Drive – 150 mmØ
- Stone Ridge Boulevard – 375 mmØ
- Bass Lake SWM Pond Trail – 375 mmØ
- Sierra Drive – 200 mmØ

The receiving sanitary sewer system on Stone Ridge Boulevard from University Avenue, upstream to the connection points was analyzed and found to have sufficient hydraulic capacity to convey sanitary sewage flows from the Project Lands.

Gravity sanitary sewer system will be extended westerly into the Project Lands to service all the lands except for the Medium Density Block located in the northwest corner of the Project Lands, which will need to construct a small private sanitary pumping facility to drain the lower portion of the Block. Details of the number of units to be serviced by this facility will be determined during Site Plan Approval once a development concept has been determined.

The sanitary and storm sewer systems cannot cross the Trans Canada pipeline at Stone Ridge Boulevard due to grading constraints. Trans Canada has two pipelines within their easement. The larger pipe is a 36" diameter pipe and has 5 feet of cover. As a result, both the sanitary and storm pipes must cross the Trans Canada easement under the pipelines. Therefore, both sewer systems will cross the Trans Canada easement approximately 60 m west of Stone Ridge Boulevard, through dedicated blocks between residential lots as further described in Section 7.

It is proposed that the sanitary sewers be constructed in accordance with the City of Orillia and the MECP guidelines to service the Project. The proposed sewers will consist of a minimum diameter of 200 mm and will be designed to meet minimum design grades and the required minimum and maximum velocities under flow conditions. The proposed sanitary sewer system for the site can be seen on Figure 2 in Appendix G.

The existing sanitary design sheets for the Stone Ridge Subdivision have been updated with the proposed sanitary sewage flows from the Project Lands and confirms that the existing sanitary sewers have sufficient capacity to service the proposed Project Lands. The sewer designs sheets are in Appendix B.

6. Stormwater Management

6.1. Overview

A key component of developing the Project Lands is the need to address SWM issues as well as related environmental concerns. SWM parameters are developed from an understanding of the site's natural systems.

The Champlain SWM Pond and Bass Lake SWM Pond designs were completed to support development of the Stone Ridge Subdivision. The designs were completed in July 2005 and April 2007, respectively. Part of these designs included estimates of future land use for the Project Lands, as a result those early estimates will be compared to the current proposed land use to verify that the existing SWM facilities are suitable.

6.2. Analysis Methodology

The design of the SWM Facilities for this site has been conducted in accordance with:

- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003.
- The Ministry of Environment, Stormwater Management Practices Planning and Design Manual, 1994.
- City of Orillia, Engineering Design Criteria, February 2015
- TSH Associates, Stormwater Management Report Stone Ridge Subdivision, July 2005
- TSH Associates, Stormwater Management Report Stone Ridge Subdivision Phase 2, April 2007
- The City of Orillia Official Plan, March 2010
- City of Orillia Comprehensive Stormwater Management Master Plan, February 2016

To confirm that the facilities meet current objectives, the computer model Visual OTTHYMO was updated to reflect current proposed land uses in the Project Lands.

6.3. The City of Orillia Official Plan

As the project proposes the development or redevelopment with impervious areas equal to or greater than 500 m^2 considerations were taken to satisfy the City of Orillia Official Plan, Section 6.2.3. This report includes the following:

i. The design is consistent with the City of Orillia's current stormwater management master plan with respect to quantity and quality control, as well as LID.

ii. The project site is not located within the LSRCA watershed boundary.

iii. An integrated treatment train approach using Low Impact Development (LID) techniques is proposed through the use of rooftop infiltration and soakaway pits.

iv. A Hydrogeological study for the proposed development has been completed by Stantec dated May, 2020.

v. Water balance is discussed in section 7 of this report and calculations are included in Appendix C.

vi. Phosphorous Budget is discussed in section 8 of this report and calculations are included in Appendix C.

6.4. Existing Drainage Conditions

The Project Lands are situated along the west limits of the City of Orillia boundary, east of Line 15, south of Bass Lake Sideroad, west of the Stone Ridge Subdivision and north from Lakehead University. Most of the Project Lands are currently under agricultural use. An Environmental low Area is located in the northern, central portion of the property immediately south of Bass Lake Side Road. The Bass Lake SWM Pond is located immediately south of the Environmental Area and a wood lot is located in the southern third of the property on a high ridge spanning east to west.

The Project Lands consists of hills and valleys and the ground surface is undulating and generally descends from the southwest and to the east towards the wetland in the central northern portion of the site. The ground surface elevations vary by approximately 22 m between the highest and lowest points.

Two external areas west of Line 15 drain under Line 15 into the Project Lands. An area of 24.8 ha will drain through the central portion of the Project Lands into the Bass Lake SWM Pond and into the Environmental Area. A second external area of 15.3 ha. also drains through the northern portion of the Project Lands and is conveyed easterly to the Environmental Area. Runoff from the Environmental Area ultimately drains northerly under Bass Lake Side Road through a CSP culvert.

The southern portion of the Project Lands (south of the wood lot) drains in an easterly direction towards University Avenue.

As per the Hydrogeological Investigation completed by Stantec dated September 30, 2022 the site consists of topsoil underlain by New Market till (sandy silt to sandy silt till) ranging from 1.5 m to 9.1 m thick with limited infiltration potential. The New Market till is overlain by silt sand, sand and gravel in the northwest (Catchment Area 208) which may be suitable for infiltration. Groundwater depth across the site ranged from 0.4 m to greater than 9.2 m below grade. The Upper Aquifer Complex is located beneath the New Market till and is located at an elevation ranging from 260.0 m to 283.4 m AMSL.

Figure 4 shows all storm drainage areas and proposed sewer routing.

6.5. Proposed Drainage Conditions

The proposed development consists mostly of pasture lands and farm lands. There are no existing developed areas that drain their uncontrolled/untreated storm runoff through the development lands that could be treated within the proposed development. Therefore, the proposed SWM controls presented within this report will focus on treating storm runoff from the development lands.

The southern portion of the Project Lands (Catchment 702) is proposed to drain to Diana Drive in the Stone Ridge Subdivision. Storm runoff from Diana Drive is ultimately conveyed to the existing Champlain SWM Pond that provides Enhanced Level quality control as detailed in the TSH report approved by the City of Orillia and MECP.

The remainder of the Project Lands will drain northerly to the Bass Lake Side Road culvert. Catchment 207 consists of the wetland area upstream of the Bass Lake Side Road and includes uncontrolled runoff from rear yards of lots (within catchment area 201, 203, and 208) adjacent to the wetland. The majority of the development area will drain into the Bass Lake SWM Pond (Catchment 201 and 209 from the Trailside lands) and Catchments 202-205 and 206 (SWM Pond/park Block) from the existing Stone Ridge Subdivision. The Bass Lake SWM Pond was designed to provide Enhanced Level Quality Control for the developed catchment areas draining to it.

An area of approximately 8.2 ha, in the northwest corner of the Project Lands (Catchment 208) cannot drain into the Bass Lake SWM Pond. As a result, a new SWM pond is required at the west edge of the Environmental Lands, at the north end of Street C adjacent to the medium density block. The location was chosen in consultation with Beacon Environmental due to the limited ecological function of the cattail marsh that currently exists. According to Beacon Environmental, the pond can provide amphibian habitat and will not impact any significant functions identified in the EIS. Furthermore, the pond area can be landscaped to be more aesthetically pleasing rather than having a dense monoculture of existing cattail which will not improve to provide habitat. The new SWM Pond will be designed to municipal standards and will require MECP approval including being design to provide Enhanced Level Quality Control. Given the topography in the northwest corner of the Project Lands and the limited ecological function of the existing cattail mineral shallow marsh area, the location shown for the new SWM Pond is consistent with the placement of the existing Bass Lake SWM Pond in the wetland edge that was approved by the City and MECP. Preliminary consultation with Beacon Environmental suggests that a SWM pond in the proposed location will not have a detrimental impact on the Environmental Lands and can in fact augment existing ecological function. A full environmental study as well as full municipal and MECP approval will be obtained prior to the SWM Pond construction.

External Catchment Area 101 located southwest of the project site has a 100-year peak flow of 0.94 m^3/s which is required to be conveyed through the Trailside Development. The minor system will be conveyed within the storm sewer while the major system from this area will be conveyed overland within a 9.2m wide drainage block. The major system will then be conveyed overland on Trailside Road, Street E and Street C where it will ultimately be conveyed on Stone Ridge Boulevard to the Bass Lake SWM Pond. The external Catchment Area 102 (15.3 ha) northwest of the site has a peak flow of 1.40 m^3/s and will be conveyed through the development within a drainage block on the medium density site (to be sized during detailed design of the medium density block) and outlet north of the proposed SWM pond. The Preliminary site layout for stormwater servicing can be found on Figure 3 in Appendix G.

A treatment train approach has been proposed where possible. Rooftop runoff will drain to infiltration trenches where soils are suitable. Lot grading will be designed where possible at minimum City of Orillia grades to slow runoff down and promote infiltration/evaporation. Lot grading less than City standard is not preferred as ponding/nuisance water results in excessive homeowner complaints. Rural cross sections were considered but are not City Standard for urban development. Typically, asphalt surfaces are City Standard however, permeable pavers can be incorporated in the detailed design of site plans and used to promote infiltration, filter storm runoff, slow conveyance of runoff and is used in parking spaces typically. The use of permeable pavers will be further investigated at detail design stage. Storm sewers will be designed as per City of Orillia standards will capture and convey storm runoff to the existing and proposed SWM Ponds to provide final treatment.

6.6. Champlain SWM Pond

The original Champlain SWM Pond was expanded to accommodate part of the Stone Ridge Subdivision. Excavation of 21,000 m^3 of quantity control volume was initially excavated in 2006 to support Phase 1 through 6 of the Stone Ridge Subdivision. The final expansion of the Champlain Pond was completed in 2015 and included an additional 58,000 m^3 of quantity control storage to accommodate the remaining phases in Stone Ridge Subdivision (Phase 7 and 8) and the Project lands tributary to this pond.

As shown on the Ultimate Storm Drainage Plan STM-2B completed by AECOM for the Champlain SWM Pond retrofit, the southeast portion of the Trailside Lands shown in Catchment Area 702 drain to the Champlain SWM pond. The proposed drainage areas for the Project Lands road network were compared to the Storm Catchment Boundaries utilized in the detailed design of the Champlain SWM Pond retrofit catchment boundaries and total impervious values were compared to the original design parameters and found to be similar. The TSH design catchments and the proposed drainage area draining to the Champlain Storm Pond are shown on Post-Development Storm Catchment Plan STM-2.

During development of Diana Drive a 675 mm diameter storm sewer stub was provided to Street J for the West Lands. The storm sewer design sheet for the Stone Ridge Subdivision allowed for an area of 10.5 ha at a runoff coefficient of 0.45. The proposed drainage area and runoff coefficient shown on the Ultimate Post-Development Storm Drainage Plan STM-2B shows an area of 11.0 ha at a runoff coefficient of 0.42. The Stone Ridge Subdivision storm sewer design sheet was updated with the proposed drainage area and runoff coefficient at Street J which shows that the downstream storm sewer has sufficient capacity to convey the proposed runoff directed to Diana Drive. The updated storm sewer design sheet is included in Appendix D.

6.7. Bass Lake SWM Pond

The existing Bass Lake SWM Pond was designed to accommodate runoff from the central and eastern portion of the Project Lands. The existing wet pond SWM facility includes sediment forebays, a separate wet cell component for quality control and was designed to meet MECP guidelines with internal side slopes of 4:1, with a 3.0 m wide 7:1 safety shelf around the permanent pool.

The outlet structure includes a 250 mm diameter orifice for controlling peak flows up to the 25-year storm event. All released flows from the pond pass through a control manhole and are conveyed to the adjacent Environmental Lands. The 100-year storm event is conveyed through an emergency overflow weir that is 60 m wide.

The proposed drainage areas were compared to the Storm Catchment Boundaries utilized in the detailed design of the Bass Lake SWM Pond prepared by TSH. A 675 mm diameter storm stub was provided to service the future extension of Sierra Drive. The storm sewer design sheet for the Stone Ridge Subdivision allowed for an area of 6.56 ha at a runoff coefficient of 0.50. The proposed drainage area and runoff coefficient shown on the Post-Development Storm Catchment Plan, Drawing STM-2 shows an area of 5.73 ha at a runoff coefficient of 0.50 which is less than the allowed for drainage area and runoff coefficient. The Stone Ridge Subdivision storm sewer design sheet is included in Appendix D.

The proposed catchment boundaries and total impervious values for the Project Lands were compared to the values used in the Bass Lake SWM Pond detailed design and shown on the Post-Development Storm Drainage Plan STM-4. The TSH Visual OTTHYMO Post Development model used in the original design was recreated and the updated catchment areas and impervious values were included in the model. The Bass Lake SWM Pond outflow and storage volume can be found in Table 3 below. The Bass Lake SWM Pond design compared the pre and post-development peak flow values at culvert under Bass Lake Side Road. The following Table provides a summary of the pre and post-development peak flows from the approved TSH report for Bass Lake SWM pond as well as the revised modeling results completed for the updated West Lands layout. The existing model was not remodelled as the TSH existing model was taken as base line conditions as it was approved by the City of Orillia and MECP. The revised post development model included updated directly connected imperviousness values for the school blocks which were calculated assuming rooftops would discharge directly to the storm sewer. Table 2 below summarizes the pre-development peak flow from the TSH model and the post-development peak flow from the original TSH model and the revised Pearson Engineering model, it can be seen that the post-development peak flows to Bass Lake Sideroad are equal to or less than the original approved values. A copy of Table 2 from the TSH Report and output of the Visual OTTHYMO modeling can be found in Appendix E.

Table 2: Summary of Pre and Post Development Peak Flows to Bass Lake Sideroad

	25 mm Storm	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	100 Year Storm	Regional Storm - Timmins
Pre-Development 24-Hour SCS Storm (TSH) (m^3/s)	-	0.58	1.23	1.75	2.36	3.58	6.48
Post-Development 24-Hour SCS Storm (TSH) (m^3/s)	-	0.57	1.20	1.70	2.20	3.20	7.94
Post-Development 24-Hour SCS Storm (Pearson Eng.) (m^3/s)	**-**	**0.58**	**1.06**	**1.50**	**1.95**	**2.93**	**8.11**
Pre-Development 4-Hour Chicago Storm (TSH) (m^3/s)	-	0.57	1.65	2.10	2.59	3.32	-
Post-Development 4-Hour Chicago Storm (TSH) (m^3/s)	0.23	0.49	1.14	1.51	1.89	2.52	-
Post-Development 4-Hour Chicago Storm (Pearson Eng.) (m^3/s)	**0.27**	**0.48**	**1.02**	**1.35**	**1.68**	**2.28**	**-**

Table 3: Bass Lake SWM Pond Outflow and Storage

	25 mm Storm	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Yr Storm	Regional Storm - Timmins
24 Hour SCS Storm Events								
Peak Flow (m^3/s)	-	0.11	0.13	0.15	0.16	0.18	0.30	5.46
Storage Volume (m^3)	-	15,965	28,979	38,715	50,006	59,781	67,017	85,725
4 Hour Chicago Storm Events								
Peak Flow (m^3/s)	0.09	0.11	0.14	0.15	0.15	0.16	0.17	-
Storage Volume (m^3)	8,535	15,764	33,258	40,004	46,874	48,957	56,487	-

6.8. Proposed New SWM Pond

The existing Bass Lake SWM Pond report completed by TSH provided design peak flows at the culvert under Bass Lake Side Road. Due to topographical constraints a second SWM Pond is required to service the northwest corner of the Project Lands. Catchment area 208 draining to the proposed SWM pond has an imperviousness of 54% and directly connected imperviousness of 43%. The Bass Lake SWM Pond provides overcontrol to reduce the size of the New SWM Pond and to ensure that peak flows at the Bass Lake Side Road culvert are equal to or less than pre-development levels. The new SWM Pond will require a volume of approximately 3,000 m^3 for quantity control. Table 4 below provides the summary of Visual Otthymo output for New SWM Pond.

Table 4: New SWM Pond Outflow and Storage

	25 mm Storm	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Yr Storm	Regional Storm - Timmins
24 Hour SCS Storm Events								
Peak Flow (m^3/s)	-	0.17	0.29	0.43	0.56	0.72	0.89	0.78
Storage Volume (m^3)	-	677	1,061	1,263	1,446	1,598	1,730	1,645
4 Hour Chicago Storm Events								
Peak Flow (m^3/s)	0.10	0.16	0.33	0.45	0.56	0.62	0.79	-
Storage Volume (m^3)	408	659	1,113	1,281	1,437	1,516	1,649	-

6.9. Quality Control

Quality control for the Champlain SWM Pond is provided through a constructed wetland, a sediment forebay and a wet cell that treats runoff from tributary areas from the Stone Ridge Subdivision, West Ridge Place, XChange and Costco Site Plans, adjacent industrial areas and the southern portion of the Project Lands. The Champlain SWM Pond design area and impervious coefficient for the tributary portion of the Project lands match what is being proposed, as a result the existing Champlain SMW Pond will provide the required Enhanced Level Quality Control.

Given that the proposed catchment areas and total impervious values for the tributary areas from the Project Lands draining to the Bass Lake SWM Pond are similar to the design values used by TSH, quality control for the majority of the proposed development is currently constructed and functioning properly. The Bass Lake SWM Pond has two sediment forebays complete with a permanent pool (wet cell) and has been designed to provide Enhanced Level Quality Control.

The New SWM Pond will need to provide Enhanced Level Quality Control for 80% TSS removal to all developed lands. Calculations for the drainage area to the New SWM Pond indicated 1,400 m^3 of permanent wet pool is required to meet MECP Guidelines.

The west area of the project is located within the Wellhead Protection Areas. The possible source of cross contamination of pathogens or contaminants is limited for this project given the primary residential development type. Furthermore, the underlying New Market Aquitard which has limited capacity for infiltration of surface water thereby reducing the ability for cross contaminant of pathogens/contaminants is minimal. The proposed treatment train SWM design for the site resulting in an end of pipe facility will help reduce the potential for cross contamination.

To ensure stormwater quality control during construction, it is imperative that effective erosion and sedimentation controls be in place during construction activities. A detailed Sediment and Erosion control drawing will be designed and implemented for each phase of development to limit the soil transport and on-site erosion control plan to show temporary facilities for sediment control based on drainage area, slopes, development phasing, downstream constraints. It is therefore recommended that the following be implemented to assist in achieving acceptable stormwater runoff quality:

- Installation of silt fence at appropriate locations.
- Implementation of cut-off swales and rock check dams.
- Use of temporary sediment control basins and hickenbottom structures as necessary.
- Restoration of exposed surfaces with vegetation and non-vegetative material as soon as construction schedules permit;
- Installation of filter strips where applicable.
- Reduce stormwater drainage velocities where possible;

Ensure that disturbed areas are vegetated and stabilized as quickly as possible;

6.10. Low Impact Development

Modern Stormwater Management (SWM) practices have evolved to incorporate Low Impact Development (LID) techniques where appropriate. When properly implemented, LID techniques enhance runoff infiltration into the shallow soil regime. However, these techniques when implemented incorrectly cause future problems such as saturated ground that does not dry up in a reasonable time. Under these circumstances, future remediation may be required. It is proposed that LID techniques be implemented in only portions of the Project Lands where appropriate soil conditions exist after completion of all grading.

Additional LID's such as filter strips were storm runoff is conveyed as sheet flow across a minimum 5m wide grassed strip were investigated and found to be not feasible for most of the subdivision due to the urban nature of the residential development. Filter strips will be reviewed at detail design for park blocks and institutional blocks were larger areas of grass strips may be available to use as filter strips. Bioretention trenches can be used for quality control complete with underdrain where non favourable soils exist for infiltration as well as helping slow down the conveyance of storm runoff. Bioretention trenches are not typically used within municipal right of ways but may be able to be used in medium/high density blocks, institutional and commercial blocks. The use of bioretention trenches will be further investigated at the detailed design stage and implemented where feasible.

As per the Geotechnical report by Stantec, the central and northwestern portions of the Project Lands are more suitable to LID techniques due to the soil having higher infiltration potential and lower groundwater elevations. Additionally, the preliminary grading design is anticipating that significant earthworks will be required to balance the cut / fill requirements to meet City grading standards. As the fill is expected to reach depths of 5m and will be heavily compacted, the native silty sand material will likely not provide the required infiltration characteristics to implement LID's. Therefore, during detailed design, LID techniques should be implemented where native undisturbed soils (with appropriate infiltration capacity) are available. LID design will be reviewed in further detail during each phase of the development and coordinated with the geotechnical engineer and in-situ testing to ensure suitable soils. Soakaway pits and rooftop infiltration galleries are proposed and are discussed in more detail in sections 7 and 8.

6.11. Oro and Hawkestone Creeks Subwatershed Plan

The Proposed Lands are located near the boundary for the North Oro Creeks watershed. As such, the Oro-Medonte and Hawkestone Creeks Subwatershed Plan (OHCSP) completed by the Lake Simcoe Region Conservation Authority in 2013 was reviewed to determine the catchment boundary as well as any recommendations for any development in this watershed.

During the detailed design and initial phases of development of the Stone Ridge Subdivision in 2005, storm catchment boundaries for the Project Lands area were developed and agreed upon by the City of Orillia which provided for the southern portion of the Project Lands to drain to the Champlain SWM Pond. Subsequently, development of University Avenue and Lakehead University in 2009-2010 followed the agreed upon catchment boundaries, as a result the storm system on the Lake Head University property has only been designed to accept runoff from the rear portion of the residential lots which abut the property line. The storm system on the Stone Ridge Subdivision has been designed to accept runoff from the Project Lands.

The net result is that runoff from the Project Lands will not drain to the Oro and Hawkestone Creeks Watershed.

7. Water Balance

Since the post-development state will increase the imperviousness of the site, considerations were taken in regard to groundwater recharge to satisfy the City's water balance criteria. As per Section 5.2 of the Hydro G study, there is a seasonally high groundwater table and the recommended 1m separation from the water table may affect the ability to implement LID's. Furthermore, LIDs would be best employed in the central to northwestern portions of the site where coarse textured glaciolacustrine or ice-contact deposits of silty sand, sand or gravel occur and required separation to the water table is met.

As noted in Section 4.2 of the Hydro G study, the groundwater volume contributions to the adjacent wetland from the New Market Till/Aquitard are expected to be small given the hydro stratigraphic unit is characterized by low permeability indicating on site infiltration is minimal. Furthermore, section 4.2.1 indicates that surface water contributions from the hummocky topographic landscape is expected to be the main source of water that maintains the form and function of the wetland again confirming minimal existing infiltration is occurring. Given the above noted information and when reviewing Figure 11 and 12 (cross sections of the site) the New Market Till/Aquitard is relatively close to the surface except in the northwest area of the site (north of TCPL/Stone Ridge Boulevard. Furthermore, the majority of the site is on sloping lands (greater than 5% and up to 8%) as well as being farmed, henceforth, the infiltration is expected to be low. Therefore, the existing infiltration volumes below are expected to be overestimated given the existing soils on this site and we would expect less infiltration to occur.

MOE Table 3.1 from the SWM Planning and Practices Guideline, calculations were completed comparing the current condition infiltration volumes to post-development infiltration volumes. Table 3.1 is a generic table used to estimate infiltration volumes but does not necessarily take into account site specific conditions which the Hydro G report for this site provides. Given the above noted soils and hydrogeologic information, we expect that existing infiltration on site is to be less than those values presented in Table 3.1 and have applied a 25% reduction to the infiltration values calculated using Table 3.1. Calculations were completed and the total existing infiltration volume of the site is 124,925 m^3. In the post-development condition, the infiltration volume will be reduced to 50,810 m^3, resulting in a deficit of 74,115 m^3. A typical soak away pit detail is included in Appendix C.

In order to infiltrate the deficit volume of 74,115 m^3 annually, it is required to infiltrate it is proposed to infiltrate 15 mm of rainfall from the medium and high-density blocks, as well as the commercial and school block rooftop areas in underground infiltration galleries assuming the post grading soils are suitable for infiltration. This accounts for an infiltration volume of 36,397 m^3. The remaining 37,717 m^3 is proposed to be infiltrated in soakaway pits for the residential lots. Assuming all residential lots will be provided a soakaway pit, it is required to infiltrate 38% of annual precipitation which is equivalent to a 5 mm storm as per Figure C-2 of the MOE's Stormwater Management Practices Planning and Design Manual over the rooftop area. A soakaway pit volume of 1.95 m^3 is required to meet water balance requirements. Calculations also demonstrate that if soakaway pits are sized using the 12.5 mm storm, 401 lots would be required to meet water balance requirements in a soakaway pit with a size of 4.88 m^3. Calculations have been completed assuming the existing soils are favorable for infiltration which given the information in the Hydro G report indicates are not favorable and will likely be limited to the development in the northwest corner of the site. As per the City of Orillia ECA CLI, the City is required to have access to LID's to ensure the long term maintenance of the facility. As such, soakaway pits are to be located in the municipal right of way where available or in the front yard close to the property line to grant legal access in favor of the City. Exact locations of LID features will be further investigated at the detailed design stage. Where soils are more favourable in the northwest and central portion of the site, 25mm of runoff from the roof will be reviewed and used where it can be accommodated. Detailed calculations can be seen in Appendix C.

8. Phosphorus Budget

Local conservation authorities have determined the importance of reducing phosphorus levels in water courses in this area. The reduction was based on conservative values derived from the Lake Simcoe Region Conservation Authority. As such, best efforts are to be employed in order to reduce phosphorus levels to pre-development levels or better.

Under existing conditions, the project lands generates 21.00 kg of phosphorus. The existing Stoneridge Subdivision generates 28.02 kg which is conveyed through the wet detention pond which provides a phosphorous removal efficiency of 63%, resulting in a phosphorous load of 10.37 kg. Therefore, the total pre-development annual phosphorous load for the tributary area draining to the existing Bass Lake SWM Pond and proposed New SWM Pond is 31.53 kg.

With the development of the project lands, the post-development phosphorous load will be increased to 93.21 kg annually without treatment. Including the 10.37 kg from the existing Stoneridge Subdivision, the post-development phosphorous loading is 82.85 kg. Best efforts will be used in order to reduce the phosphorus loading as much as is reasonably possible.

To minimize the amount of phosphorous being discharged from the site, a treatment train will be implemented. Rooftop runoff from the majority of proposed buildings will be conveyed to soakaway pits and underground infiltration galleries. Stormwater will then be conveyed to a downstream wet SWM Pond which will further reduce phosphorous levels. The typical phosphorus reduction for underground infiltration is 60% and wet pond is 63%. The following Table 8 details the anticipated phosphorous loadings for the pre and post-development conditions.

Table 8: Phosphorus Loadings

	Total P (kg)
Pre-Development	31.53
Uncontrolled Post-Development	93.21
Controlled Post-Development	41.65

All reasonable efforts have been made to reduce post-development phosphorous loading and is a significant reduction compared to the uncontrolled scenario. Detailed phosphorous calculations can be found in Appendix C.

9. TransCanada Pipeline

The TransCanada Pipeline (TCPL) crosses the Project Lands in a southwest to northeast direction from Line 15 in the south to the existing Stone Ridge Subdivision in the north. Two (2) gas mains (914 mm and 762 mm diameter) convey natural gas through the Project Lands. In order to service the northwest portion of the Project Lands, the proposed watermain, sanitary and storm sewers will have to cross the TCPL pipeline similar to the crossings at Orion Boulevard and Sierra Drive in the Stone Ridge Subdivision. As such, service crossing elevations were reviewed to ensure no conflicts will arise at the detailed design stage.

Due to the proposed grading where Stone Ridge Boulevard and the TCPL cross, the gravity storm sewer and sanitary crossing elevations conflict with the existing elevations of the TCPL pipes. The TCPL pipes have 1.5 m of cover, and their inverts follow the existing ground elevation along their entire route. Furthermore, TCPL requires that other utilities that cross their pipeline easement, that they maintain a minimum 0.5 m separation below their pipelines. The storm and sanitary sewer systems inverts on Stone Ridge Boulevard (at TCPL), are controlled by the water elevation of the Bass Lake SWM Pond and the elevation of the invert of the sanitary sewer stub in the Stone Ridge Subdivision. The sanitary and storm sewer systems will be in direct conflict with the TCPL pipelines. The solution to the problem will be to route the sanitary and storm sewers south westerly and cross the pipeline easement approximately 60 m southwest of Stone Ridge Boulevard.

The sanitary and storm sewers are proposed to cross the TCPL from Street G to Trailside Road through servicing easements/blocks. The TCPL inverts at this location are approximately 265.90 and the preliminary calculated storm and sanitary inverts are 264.02 and 263.28, respectively. Therefore, it is anticipated that sufficient separation will be achieved at this location and will be reviewed during detailed design stage of the project.

With respect to the watermain crossing, the invert of the TransCanada pipeline at the crossing location on Stoneridge Boulevard is 262.40. Being a non-gravity system, the watermain can be installed with appropriate bends on either side of the TCPL easement.

10. Secondary Utilities

Secondary utilities will be able to service the Project Lands. During construction of the Stone Ridge Subdivision, all utilities were aware the proposed land uses for the Project lands, and their infrastructure was expanded accordingly. Letters to secondary utility companies with the Draft Plan Concept have recently been sent out and are attached in Appendix F.

11. Conclusions

The Project Lands can be serviced by extending services from the Stone Ridge Subdivision as follows:

- Extension of the Internal road network.
- Municipal water extended from the existing municipal watermains in the Stone Ridge Subdivision.
- Gravity sanitary sewer system from the existing municipal system in the Stone Ridge Subdivision and pumping of the northwest Medium Density Block to Street H gravity sanitary sewer.
- Utilization of the existing Bass Lake SWM Pond and Champlain SWM pond for quantity and quality control.
- Construction of a new Stormwater Management Pond at the north end of Street C to provide quantity and quality control.
- LID techniques such as soakaway pits and underground rooftop infiltration galleries, where soil infiltration conditions allow will provide quality control for the site as well as reduce phosphorus levels and provide water balance.
- Extension of existing utilities within the Stone Ridge Subdivision.

The analysis and conceptual designs outlined in this report demonstrates that the servicing is feasible.

All of which is respectfully submitted,

Pearson Engineering Ltd.





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Principal

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Partner, Manager of Engineering Services

Appendix A

Water Calculations and Supporting Documents

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West Lands, Orillia
Water Flow Calculations

Design Criteria:

Demand per capita (Q):	300	L/cap/day
Peak Rate Factor (Max. Hour)	4.50	(Section 4.4.2, City of Orillia Engineering Design Guidelines)
Max. Day Factor	1.60	(Section 4.4.2, City of Orillia Engineering Design Guidelines)

Site Data

Description	Density		Units		Flow Rate		Peaking Factors	
Residential Space	3.00	people/unit	1,395	units	300	L/cap/d	MAX DAY FACTOR	1.6
Commercial Space	31.75	people/ha	1.03	ha	28,000	L/ha*d	PEAK RATE FACTOR	4.5
Institutional Space	43.00	people/ha	4.58	ha	38,000	L/ha*d		

West Lands Population

Pop. Residential	=	3.00	x	1,395	=	4185

Water Demand Calculations

Average Day Demand (ADD)	=	Q	x	Population
Max Day Flow (MDF)	=	ADD	x	Max Day Factor
Peak Hour Demand (PHD)	=	ADD	x	Peak Rate Factor

Building	Population (People)	Average Day Demand (L/s)	Max Day (L/s)	Peak Hour (L/s)	Peak Hour (GPM)
Residential Space	4,185	14.53	23.25	65.39	1,035.79
Commercial Space	33	0.11	0.18	0.51	8.07
Institutional Space	197	0.68	1.09	3.07	48.67
		0.00	0.00	0.00	0.00
		-	-	-	-
Total	**4,414**	**15.33**	**24.52**	**68.97**	**1,092.53**

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WaterCAD FlexTable: Junction Table - Domestic MDD

Label	Elevation (m)	Head (m)	Demand (gpm)	Pressure (psi)
J-1	268.4	54.81	1.16	77.8
J-2	271.9	51.26	1.16	72.8
J-3	280.2	42.93	6.27	60.9
J-4	272.3	50.78	5.89	72.1
J-5	268.3	54.90	1.16	77.9
J-6	265.7	57.60	1.16	81.8
J-7	264.7	58.63	1.16	83.2
J-8	266.9	56.31	1.16	79.9
J-9	266.0	57.29	4.02	81.3
J-10	267.0	56.36	4.22	80.0
J-11	264.5	58.86	1.16	83.5
J-12	266.1	57.19	1.16	81.2
J-13	264.2	59.15	4.23	84.0
J-14	263.9	59.42	1.16	84.3
J-15	265.0	58.33	1.16	82.8
J-16	267.5	55.70	1.16	79.1
J-17	274.7	48.17	12.88	68.4
J-18	273.8	49.24	1.16	69.9
J-19	278.3	44.79	2.39	63.6
J-20	266.9	56.08	1.16	79.6
J-21	267.4	55.54	1.16	78.8
J-22	272.8	50.09	1.16	71.1
J-23	262.1	60.73	7.07	86.2
J-24	275.1	48.22	1.16	68.4
J-25	276.6	46.76	1.16	66.4
J-26	282.0	41.29	1.16	58.6
J-27	282.8	40.55	7.02	57.6
J-1127	258.0	48.41	1.13	68.7
J-1133	263.0	43.27	0.33	61.4
J-1141	258.8	47.63	0.03	67.6
J-1329	269.0	50.42	0.71	71.6
J-1331	282.3	37.12	0.09	52.7
J-1394	282.0	37.42	0.43	53.1
J-1395	264.0	42.45	0.23	60.2
J-1396	273.0	46.40	0.34	65.9
J-1399	283.0	36.42	0.19	51.7
J-1490	260.1	45.74	0.23	64.9
J-1491	253.8	52.61	0.23	74.7
J-1492	260.3	45.35	0.33	64.4
J-1493	257.0	49.41	0.21	70.1
J-1523	265.2	40.96	0.08	58.1
J-1560	264.1	42.01	0.83	59.6
J-1561	263.0	43.03	0.31	61.1
J-1562	260.5	45.40	0.22	64.4
J-1563	264.6	58.88	0.14	83.6
J-1564	267.9	55.51	0.22	78.8
J-1565	273.0	50.63	0.25	71.9
J-1566	279.8	43.57	5.20	61.9
J-1567	282.0	41.34	5.20	58.7
J-1568	284.0	39.31	0.00	55.8

Label	Elevation (m)	Head (m)	Demand (gpm)	Pressure (psi)
J-1570	267.1	56.38	0.16	80.0
J-1571	271.7	51.89	0.44	73.6
J-1572	272.6	51.30	0.57	72.8
J-1573	266.5	38.69	0.00	54.9
J-1575	274.0	49.55	0.17	70.3
J-1638	282.4	40.94	0.09	58.1
J-1663	269.3	36.76	0.83	52.2
J-1672	282.0	24.43	0.10	34.7
J-1694	265.5	58.50	0.00	83.0
J-1702	267.3	56.21	0.22	79.8
J-1704	268.0	55.38	0.03	78.6
J-1706	264.5	41.55	0.17	59.0
J-1709	276.9	42.52	0.11	60.4
J-1710	272.8	46.62	0.12	66.2
J-1723	263.8	42.10	0.43	59.8
J-1724	260.7	45.20	0.43	64.2
J-1736	270.9	52.59	0.17	74.6
J-1738	271.0	52.41	0.00	74.4
J-1742	276.9	46.45	0.15	65.9

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West Lands, Orillia
WaterCAD FlexTable: Pipe Table - Domestic MDD

Label	Diameter (mm)	Start Node	Pressure (Start) (psi)	Stop Node	Pressure (Stop) (psi)
P-1	150	6691: J-1663	(N/A)	6692: J-1	(N/A)
P-2	150	6692: J-1	77.8	6693: J-3	60.9
P-3	200	6692: J-1	77.8	6697: J-2	72.8
P-4	200	6697: J-2	72.8	6693: J-3	60.9
P-5	200	6697: J-2	72.8	6683: J-1704	78.6
P-6	200	6693: J-3	60.9	6898: J-4	72.1
P-7	200	6898: J-4	72.1	6694: J-5	77.9
P-8	150	6694: J-5	77.9	6907: J-6	81.8
P-9	150	6907: J-6	81.8	6910: J-15	82.8
P-10	150	6907: J-6	81.8	6695: J-7	83.2
P-11	200	6696: J-8	79.9	6694: J-5	77.9
P-12	150	6696: J-8	79.9	6695: J-7	83.2
P-13	150	6695: J-7	83.2	6685: J-11	83.5
P-14	200	6684: J-9	81.3	6696: J-8	79.9
P-15	300	6683: J-1704	78.6	6904: J-10	80.0
P-16	300	6904: J-10	80.0	6684: J-9	81.3
P-17	300	6684: J-9	81.3	6685: J-11	83.5
P-18	200	6685: J-11	83.5	6698: J-12	81.2
P-19	300	6685: J-11	83.5	6901: J-13	84.0
P-20	300	6901: J-13	84.0	6686: J-14	84.3
P-21	400	6686: J-14	84.3	6706: J-1738	74.4
P-22	300	6686: J-14	84.3	6910: J-15	82.8
P-23	300	6910: J-15	82.8	6687: J-16	79.1
P-24	200	6687: J-16	79.1	6700: J-17	68.4
P-25	200	6687: J-16	79.1	6703: J-18	69.9
P-26	200	6703: J-18	69.9	6704: J-19	63.6
P-27	150	6687: J-16	79.1	6688: J-20	79.6
P-28	200	6703: J-18	69.9	6688: J-20	79.6
P-29	200	6688: J-20	79.6	6689: J-21	78.8
P-30	300	6689: J-21	78.8	6883: J-22	71.1
P-31	200	6689: J-21	78.8	6690: J-23	86.2
P-32	150	6718: J-1742	65.9	6709: J-24	68.4
P-33	150	6708: J-25	66.4	6709: J-24	68.4
P-34	150	6707: J-26	58.6	6708: J-25	66.4
P-35	150	6707: J-26	58.6	6708: J-25	66.4
P-36	200	6712: J-27	57.6	6707: J-26	58.6
P-37	300	6720: J-1567	58.7	6711: J-1638	58.1
P-38	300	6712: J-27	57.6	6711: J-1638	58.1
P-39	300	6710: J-1568	55.8	6712: J-27	57.6
P-1688	600	6735: J-1491	74.7	6743: J-1127	68.7
P-1920	400	6744: J-1395	60.2	6747: J-1141	67.6
P-2063	300	6739: J-1331	52.7	6740: J-1394	53.1
P-2065	400	6744: J-1395	60.2	6749: J-1133	61.4
P-2069	300	6741: J-1399	51.7	6742: J-1396	65.9
P-2070	300	6740: J-1394	53.1	6741: J-1399	51.7
P-2079	600	6743: J-1127	68.7	6748: J-1493	70.1
P-2191	300	6727: J-1490	64.9	6735: J-1491	74.7
P-2193	400	6727: J-1490	64.9	6728: J-1492	64.4
P-2194	400	6748: J-1493	70.1	6747: J-1141	67.6
P-2270	600	6735: J-1491	74.7	6736: J-1672	34.7
P-2291	200	6895: J-1329	71.6	6739: J-1331	52.7
P-2354	400	6725: J-1560	59.6	6737: J-1523	58.1
P-2356	400	6724: J-1561	61.1	6726: J-1562	64.4
P-2358	300	6721: J-1564	78.8	6722: J-1563	83.6
P-2361	300	6719: J-1566	61.9	6720: J-1567	58.7
P-2371	300	6742: J-1396	65.9	6732: J-1572	72.8
P-2372	400	6734: J-1573	54.9	6728: J-1492	64.4
P-2373	400	6749: J-1133	61.4	6734: J-1573	54.9
P-2376	150	6719: J-1566	61.9	6741: J-1399	51.7
P-2377	400	6713: J-1575	70.3	6714: J-1571	73.6
P-2379	400	6726: J-1562	64.4	6727: J-1490	64.9

Label	Diameter (mm)	Start Node	Pressure (Start) (psi)	Stop Node	Pressure (Stop) (psi)
P-2380	400	6725: J-1560	59.6	6724: J-1561	61.1
P-2484	150	6691: J-1663	52.2	6725: J-1560	59.6
P-2487	600	6736: J-1672	34.7	Harvie Hill Res.	22.0
P-2544	400	6737: J-1523	58.1	6736: J-1672	34.7
P-2570	400	6732: J-1572	72.8	6733: J-1694	83.0
P-2572	400	6757: PMP-15	53.0	6734: J-1573	54.9
P-2573	400	6733: J-1694	83.0	6757: PMP-15	79.9
P-2574	400	6756: PMP-16	53.0	6734: J-1573	54.9
P-2575	400	6733: J-1694	83.0	6756: PMP-16	79.9
P-2576	400	6755: PMP-13	53.1	6734: J-1573	54.9
P-2577	400	6733: J-1694	83.0	6755: PMP-13	79.8
P-2578	400	6758: PMP-14	53.1	6734: J-1573	54.9
P-2579	400	6733: J-1694	83.0	6758: PMP-14	79.8
P-2584	400	6715: J-1565	71.9	6732: J-1572	72.8
P-2585	400	6714: J-1571	73.6	6715: J-1565	71.9
P-2588	300	6715: J-1565	71.9	6719: J-1566	61.9
P-2597	200	6721: J-1564	78.8	6723: J-1702	79.8
P-2599	300	6683: J-1704	78.6	6721: J-1564	78.8
P-2601	300	6722: J-1563	83.6	6723: J-1702	79.8
P-2602	150	6691: J-1663	52.2	6729: J-1706	59.0
P-2603	150	6729: J-1706	59.0	6724: J-1561	61.1
P-2609	200	6740: J-1394	53.1	6891: J-1709	60.4
P-2610	200	6893: J-1710	66.2	6895: J-1329	71.6
P-2611	200	6891: J-1709	60.4	6893: J-1710	66.2
P-2633	400	6731: J-1724	64.2	6726: J-1562	64.4
P-2634	150	6730: J-1723	59.8	6731: J-1724	64.2
P-2654	300	6722: J-1563	83.6	6873: PRV-1102	84.9
P-2655	300	6873: PRV-1102	59.9	6726: J-1562	64.4
P-2657	150	6879: PRV-1103	55.1	6730: J-1723	59.8
P-2658	150	6723: J-1702	79.8	6879: PRV-1103	80.1
P-2661	400	6713: J-1575	70.3	6716: J-1736	74.6
P-2662	150	6716: J-1736	74.6	6717: J-1570	80.0
P-2663	400	6716: J-1736	74.6	6706: J-1738	74.4
P-2668	150	6714: J-1571	73.6	6718: J-1742	65.9
P-2670	150	6718: J-1742	65.9	6720: J-1567	58.7
P-2673	300	6723: J-1702	79.8	6715: J-1565	71.9
P-2732	200	6742: J-1396	65.9	6744: J-1395	60.2

PEARSON ENGINEERING LTD.

Charter Construction Ltd.
West Lands, Orillia
WaterCAD FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Required) (L/s)	Fire Flow (Available)* (Upper Limit) (L/s)	Pressure Required (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-1	TRUE	100	119.8	20.3	77.1
J-2	TRUE	100	131.2	20.3	72.1
J-3	TRUE	100	114.3	20.3	60.3
J-4	TRUE	100	144.0	20.3	71.4
J-5	TRUE	100	175.8	20.3	77.2
J-6	TRUE	100	198.6	20.3	81.1
J-7	TRUE	100	214.8	20.3	82.5
J-8	TRUE	100	196.5	20.3	79.3
J-9	TRUE	100	255.8	20.3	80.6
J-10	TRUE	100	321.0	20.3	79.3
J-11	TRUE	100	263.0	20.3	82.9
J-12	TRUE	100	153.0	20.3	80.5
J-13	TRUE	100	327.9	20.3	83.3
J-14	TRUE	100	274.3	20.3	83.7
J-15	TRUE	100	293.0	20.3	82.1
J-16	TRUE	100	217.1	20.3	78.4
J-17	TRUE	100	118.3	20.3	67.7
J-18	TRUE	100	141.8	20.3	69.2
J-19	TRUE	100	121.6	20.3	62.9
J-20	TRUE	100	149.6	20.3	78.9
J-21	TRUE	100	119.7	20.3	78.2
J-22	TRUE	100	107.3	20.3	70.4
J-23	TRUE	100	105.9	20.3	85.5
J-24	TRUE	100	142.1	20.3	67.8
J-25	TRUE	100	117.2	20.3	65.7
J-26	TRUE	100	133.7	20.3	57.9
J-27	TRUE	100	156.5	20.3	56.9
J-1127	TRUE	100	500.0	20.3	68.7
J-1133	TRUE	100	500.0	20.3	61.4
J-1141	TRUE	100	500.0	20.3	67.6
J-1329	TRUE	100	169.6	20.3	71.1
J-1331	TRUE	100	184.0	20.3	52.2
J-1394	TRUE	100	212.3	20.3	52.6
J-1395	TRUE	100	500.0	20.3	60.2
J-1396	TRUE	100	275.8	20.3	65.3
J-1399	TRUE	100	237.1	20.3	51.2
J-1490	TRUE	100	500.0	20.3	64.9
J-1491	TRUE	100	500.0	20.3	74.7
J-1492	TRUE	100	500.0	20.3	64.4
J-1493	TRUE	100	500.0	20.3	70.1
J-1523	TRUE	100	500.0	20.3	58.1
J-1560	TRUE	100	500.0	20.3	59.6
J-1561	TRUE	100	500.0	20.3	61.1
J-1562	TRUE	100	500.0	20.3	64.4
J-1563	TRUE	100	373.5	20.3	82.9
J-1564	TRUE	100	295.0	20.3	78.1
J-1565	TRUE	100	296.1	20.3	71.2
J-1566	TRUE	100	217.0	20.3	61.2
J-1567	TRUE	100	190.7	20.3	58.0
J-1568	TRUE	100	145.4	20.3	55.1
J-1570	FALSE	100	86.2	20.3	79.4
J-1571	TRUE	100	294.0	20.3	73.0
J-1572	TRUE	100	339.7	20.3	72.1
J-1573	TRUE	100	500.0	20.3	54.9
J-1575	TRUE	100	294.2	20.3	69.7
J-1638	TRUE	100	188.4	20.3	57.4
J-1663	TRUE	100	106.3	20.3	52.2
J-1672	TRUE	100	500.0	20.3	34.7
J-1694	TRUE	100	341.5	20.3	82.4

J-1702	TRUE	100	295.3	20.3	79.1
J-1704	TRUE	100	295.0	20.3	77.9
J-1706	TRUE	100	126.8	20.3	59.0
J-1709	TRUE	100	151.8	20.3	59.8
J-1710	TRUE	100	158.5	20.3	65.7
J-1723	FALSE	100	86.5	20.3	59.8
J-1724	TRUE	100	500.0	20.3	64.2
J-1736	TRUE	100	294.3	20.3	74
J-1738	TRUE	100	294.4	20.3	73.7
J-1742	TRUE	100	156.9	20.3	65.3

* Available fire flows above the stated upper limit of 500 L/s are capped due to adequate fire flow available.

Appendix B

Sanitary Calculations and Supporting Documents

Charter Construction Ltd.
West Lands, Orillia
Sanitary Flow Calculations

Design Criteria

Flow per Capita (Q):	300	L/cap/day
Peak Flow:	Qp = P * Q * M / 86,400	
Peak Extraneous Flow:	3.46	m^3/ha/day
Peaking Factor (Harmon Formula):	M = 1 + (14 / (4 + (P / 1000) ^ 0.5))	2 <= "M" <= 4

Site Data

Description	Density		Units		Flow Rate	
Residential Space	3.00	people/unit	1,395	units	300	L/cap/d
Commercial Space	31.75	people/ha	1.03	ha	28,000	L/ha*d
Institutional Space	43.00	people/ha	4.58	ha	38,000	L/ha*d

Equivalent Population = L/s / (300 L/cap/d /86,400 x 2.95 ppu)

West Lands Population

Residential Space	=	3.00	x	1,395	=	4,185	
Commercial Space	=	33					
Institutional Space	=	197					
Pop. Total	=	4,414	people				

Calculate Average Daily Flows

ADF (L/s) Residential	=	300	x	4,185	=	1,255,500	L/day
ADF (L/s) Commercial	=	28,000	x	1.03	=	28,840	L/day
ADF (L/s) Institutional	=	38,000	x	4.58	=	174,040	L/day
ADF (L/s) Total	=	1,458,380	L/day				
ADF (L/s) Total	=	16.88	L/s				

Calculate Peaking Factor

$$M = 1 + \frac{14}{4 + \left(\frac{4{,}414}{1{,}000}\right)^{0.5}}$$

M = 3.29

Calculate Peak Flow

Qp	=	16.88	x	3.29
	=	55.61	L/s	
Infiltration Allowance	=	3.46	x	81.79
	=	282.99	m^3/day	
	=	32.75	L/s	
Qp (Inc. Infiltration Allowance)	=	88.37	L/s	

PEARSON ENGINEERING LTD.

Charter Construction Ltd.
West Lands, Orillia
Sanitary Dwelling Unit Calculations

Area 1

Description	Density/Area		Units	
Residential Space	3.00	people/unit	990	units
Institutional Space	2.51	ha		
Commercial Space				

Area 2

Description	Density/Area		Units	
Residential Space	3.00	people/unit	208	units

Area 3

Description	Density/Area		Units	
Residential Space	3.00	people/unit	90	units
Institutional Space	2.06	ha		

Area 4

Description	Density/Area		Units	
Residential Space	3.00	people/unit	107	units

Note: City of Orillia Standards state a population density of 2.95 is to be used for all types of residential landuse. However, as per original sanitary sewer design sheet for the Stone Ridge Subdivision, a density of 3.0 was applied.

Appendix C

Stormwater Management Calculations and Supporting Documents

Stone Ridge Subdivision (Phase 2)
Proposed Bass Lake Stormwater Management Pond
Stage-Storage-Discharge Table

File No.: 440-04139-20
Date: 17-Apr-07

Lower (orifice) Outlet - 25mm Storm Control

Orifice Coefficient	=	0.62	
Orifice Diameter	=	0.250	m
Orifice Area	=	0.049	m^2
Orifice Invert	=	260.50	m

Emergency Overflow Weir

Invert Elevation	=	262.60	m
Weir Length	=	60.00	m
Weir Side Slopes	=	5H:1V	

Upper Outlet (DICB) - 25 to 100 year Storm Control

Grate Ref. Elev	=	262.20 m
DICB Width	=	0.6 m
Flow	=	Refer to MTO Design Chart 4.20 (Ditch Inlet Capacity)

Elevation (m)	Storage above Perm. Pool (m^3)	Storage above 25mm Storm Elev. (m^3)	Head (m)	Lower Outlet Flow (m^3/s)	Head (m)	Upper Outlet Flow (m^3/s)	Head (m)	Emergency Weir Flow (m^3/s)	Total Flow (m^3/s)
260.50	0		-0.13	0.000					0.000
260.60	2001		-0.02	0.013					0.013
260.80	6932		0.18	0.056					0.056
260.84	8069	0	0.21	0.063					0.063
261.00	13116	5047	0.38	0.083					0.083
261.20	20359	12290	0.57	0.102					0.102
261.25	22303	14235	0.63	0.107					0.107
261.40	28444	20375	0.77	0.119					0.119
261.60	37169	29100	0.98	0.133					0.133
261.75	44010	35942	1.13	0.143					0.143
261.80	46472	38403	1.18	0.146					0.146
262.00	56535	48466	1.38	0.158					0.158
262.20	66915	58846	1.57	0.169	0.00	0.000			0.169
262.40	77586	69517	1.77	0.180	0.20	0.168			0.348
262.60	88555	80486	1.98	0.189	0.40	0.648	0.00	0.00	0.837
262.80	99830	91762	2.18	0.199	0.60	1.380	0.20	9.28	10.854
262.90	105583	97514	2.27	0.203	0.70	1.620	0.30	17.18	19.003

Note:

1. Head is calculated from the centroid of the orifice.
2. Lower Outlet → Orifice Flow = 0.62 * Area * $(2 * 9.81 * Head)^{0.5}$
2. Upper Outlet → DICB Flow is calculated using MTO Design Chart 4.20
3. Emergency Weir Flow (Broad Crested) = 1.7 * Length * $Head^{1.5}$
   where L = the average width at each flow depth using the specified side slopes.
4. Flow through the orifice outlets at levels below the orifice centroid are calculated as weir flow; $Q = CLH^{1.5}$
   where C = 1.65, L = width of the orifice at the water surface elevation and H = depth from the water surface elevation to the orifice invert.

Overall Volumes

Elevation (m)	Wet Cell Volume (m^3)	Forebay 1 Volume (m^3)	Forebay 2 Volume (m^3)	Parkland Volume (m^3)	Total Volume (m^3)	Dry Storage (m^3)	Volume above 25mm Storm Elevation (m^3)	
258.50	0				0.00			
258.60	310.54				310.54			
258.80	985.64				985.64			
259.00	1733.53				1733.53			
259.20	2555.19				2555.19			
259.30	2993.95	0.00	0.00		2993.95	**WET STORAGE**		
259.40	3451.48	23.16	61.31		3535.96			
259.60	4423.29	83.61	214.36		4721.26			
259.80	5471.40	163.82	408.91		6044.13			
260.00	6608.30	265.05	646.22		7519.57			
260.20	7864.65	388.55	927.54		9180.75			
260.35	8884.88	496.53	1168.14		10549.55			
260.40	9246.01	535.54	1254.08		11035.63			
260.50	10029.95	618.28	1434.73	0.00	12082.96	0.00		**PERMANENT POOL 260.50m**
260.60	10888.00	707.37	1627.14	861.51	14084.02	2001.06		
260.80	12859.32	905.25	2047.75	3202.34	19014.66	6931.71		
260.84	13296.53	948.22	2137.68	3769.36	20151.80	8068.84	0.00	
261.00	15180.09	1134.53	2517.46	6366.94	25199.02	13116.06	5047.22	
261.20	17928.65	1399.75	3037.71	10075.46	32441.57	20358.61	12289.77	
261.25	18695.04	1471.75	3175.77	11043.85	34386.41	22303.45	14234.61	
261.40	21166.84	1702.44	3609.51	14048.08	40526.87	28443.91	20375.07	
261.50	22915.81	1868.47	3915.13	16133.43	44832.84	32749.89	24681.05	**DRY STORAGE**
261.60	24694.36	2044.29	4234.12	18279.38	49252.15	37169.19	29100.35	
261.75	27423.72	2329.86	4737.95	21601.77	56093.30	44010.34	35941.50	
261.80		58555.02			58555.02	46472.06	38403.22	
262.00		68617.64			68617.64	56534.69	48465.84	
262.20		78998.09			78998.09	66915.13	58846.29	
262.40		89668.94			89668.94	77585.98	69517.14	
262.60		100638.06			100638.06	88555.11	80486.26	
262.80		111913.31			111913.31	99830.36	91761.52	
262.90		117665.74			117665.74	105582.78	97513.94	

Extended Detention Drawdown Calculations

Description: Stone Ridge Subdivision (Phase 2)
Bass Lake SWM Pond

Surface Area of Pond, Ap = 29051.71 m^2 (at maximum ponding elevation of 25mm storm, 260.84m)

Orifice Diameter = 0.250 m

Area of Orifice, Ao = 0.0491 m^2

Orifice Coefficient = 0.62

Depth of Water, h = 0.34 m

$$\text{Drawdown Time} = \frac{2 * Ap}{C * Ao * (2 * 9.81)^{0.5}} * h^{0.5}$$

$$= \frac{2 * 29052}{0.62 * 0.0491 * (2 * 9.81)^{0.5}} * 0.34^{0.5}$$

= 251322 seconds

= 69.81 hrs.

= 2.91 days

Since drawdown time exceeds 24 hours, the drawdown time for the 25mm storm event is O.K.

Water Quality Calculations
Proposed Stormwater Management Facility (Wet Pond)
Bass Lake Pond

Contributing Drainage Areas

Sub-Catchment ID No.	Area (ha.)	% Impervious	Land Use
202	5.3	45	Residential
205	15.9	45	Residential
Sub-total =	21.2	45	
201	28.9	50	Future Residential
203	10.1	50	Future Residential
Sub-total =	39.0	50	
204	7.3	60	High Density Residential
209	3.8	60	Future Schools
Sub-total =	11.1	60	
206	10.7	7.5	SWM Pond/Park Blocks
	10.7	7.5	
Total Area =	82.0	ha.	

Weighted Average Impervious Level:

$$\% \text{ Impervious} = \frac{21.2 * 45 + 39.0 * 50 + 11.1 * 60 + 10.7 * 7.5}{82.0}$$

$$= 44.5$$

From Table 3.2 of the MOE SWMPD Manual (March 2003),

Wet Pond Storage Volumes required for "Enhanced" protection are:

	Impervious Level			
	35%	55%	70%	85%
Storage Volume (m^3/ha.)	140	190	225	250

For a 44.5% Impervious value, the required storage is = 163.75 m^3/ha.
However, 40 m^3/ha is extended detention

Therefore, required storage volume = 123.75 m^3/ha.

Therefore, required storage volume for contributing area = Area * volume
= 82.0 * 123.75
= 10,148 m^3

Since approximately 10,565m^3 of permanent wet volume is provided, sufficient volume is being provided to meet the requirements for Enhanced Level Protection.

Bass Lake SWM Facility
Permanent Pool
Stage-Storage Table

Elevation (m)	Volume (m^3)
258.50	0
258.60	311
258.80	986
259.00	1734
259.20	2555
259.30	2994
259.40	3536
259.60	4721
259.80	6044
260.00	7520
260.20	9181
260.40	11036
260.50	12083

Permanent Pool Volume Required = 10148 m^3
(refer to Water Quality Calculations)

Permanent Pool Volume Provided = 12083 m^3

CHAMPLAIN DRAINAGE BASIN
STORMWATER MANAGEMENT FACILITY

STAGE-STORAGE-DISCHARGE

Project No: SWM-94-24
10-Feb-98

Discharge Coefficient = 0.62

Location	Orifice Size (mm)	Orifice Area (m2)	Water Elevation Quality Pond (m)	Water Elevation Quantity Pond (m)	Quality Pond ORIFICE #1 Head (m)	Quality Pond ORIFICE #1 Flow (cms)	Quantity Pond ORIFICE #2 Head (m)	Quantity Pond ORIFICE #2 Flow (cms)	TOTAL FLOW (cms)	POND VOLUME (cu.m)
Permament Pool			254.03						0.000	15,485
Center of Orifice #1	300	0.071	254.18		0.00	0.000			0.000	
			254.23		0.05	0.043			0.043	6,372
			254.33		0.15	0.075			0.075	9,687
			254.43		0.25	0.097			0.097	13,182
			254.53		0.35	0.115			0.115	17,025
			254.63		0.45	0.130			0.130	21,342
			254.73		0.55	0.144			0.144	26,249
			254.83		0.65	0.157			0.157	31,788
			254.93		0.75	0.168			0.168	38,177
			255.03		0.85	0.179			0.179	46,280
			255.13		0.95	0.189			0.189	55,692
			255.23		1.05	0.199			0.199	66,393
			255.33		1.15	0.208			0.208	78,016
			255.43		1.25	0.217			0.217	91,556
Center of Orifice #2	250	0.049	255.53		1.35	0.226			0.226	107,973
			255.63	255.65	1.45	0.234	0.13	0.048	0.281	125,310
			255.73	255.75	1.55	0.242	0.22	0.064	0.306	143,750
			255.83	255.85	1.65	0.249	0.32	0.077	0.326	162,951
			255.93	255.95	1.75	0.257	0.42	0.088	0.345	182,504
			256.03	256.06	1.85	0.264	0.53	0.098	0.362	202,361
			256.13	256.16	1.95	0.271	0.63	0.107	0.378	222,451
			256.23	256.26	2.05	0.278	0.73	0.115	0.393	242,805
			256.33	256.36	2.15	0.285	0.83	0.122	0.407	263,280
			256.40	256.40	2.22	0.289	0.87	0.126	0.415	277,652
			256.43	256.40	2.25	0.291	0.87	0.126	0.417	284,629

File: c:\kruskal\cdb-swm\drawdown.wb1[Discharge_Curve]

R.G. Robinson and Associates (Barrie) Ltd.
Consulting Engineers

Project STONE RIDGE SUBD.
Subject QUALITY CONTROL
Designed By JSC Checked

File No. 440-04139-20
Sheet No. 1 of
Date

CHAMPLAIN SWM FACILITY

EXISTING QUANTITY CONTROL VOLUME:

SEDIMENT FOREBAY (CELL 1) =	4150 m³	(TO ELEV. 254.03)
SEDIMENT FOREBAY (CELL 2) =	1040 m³	(TO ELEV. 254.03)
WETLAND (PERM. POOL) =	12 700 m³	(TO ELEV. 254.03)
(EXTENDED DET.) =	9 100 m³	(TO ELEV. 254.33)
	26 990 m³	

REQUIRED STORAGE VOLUME WAS CALCULATED BASED ON 99 m³/ha AND A DRAINAGE AREA OF 227.6 ha.

∴ REQUIRED VOLUME WAS 22 532 m³

PROPOSED CONDITIONS:

THE PROPOSED CATCHMENT AREA = 267 ha.

BASED ON REQUIRED VOLUME = 99 m³/ha

TOTAL REQUIRED VOLUME = 26 433 m³ < PROVIDED VOLUME = 26 990 m³

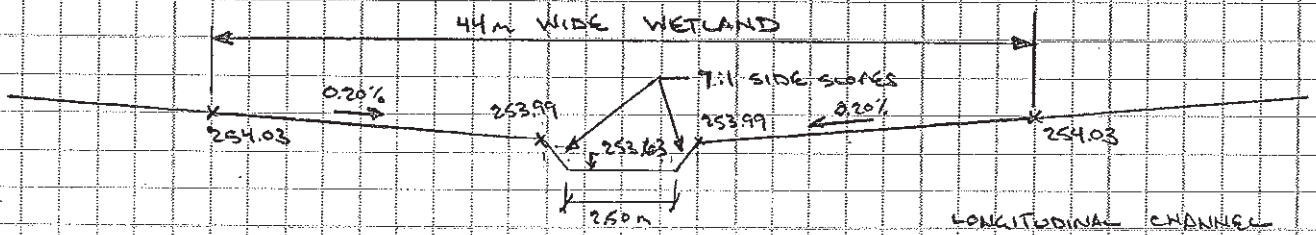
∴ NO ADDITIONAL QUALITY CONTROL VOLUME IS REQUIRED.

HOWEVER, ADDITIONAL QUALITY CONTROL IS PROPOSED FOR THE FACILITY.

R.G. Robinson and Associates (Barrie) Ltd.
Consulting Engineers

Project _____
Subject _____
Designed By _____ Checked _____

File No. _____
Sheet No. 2 of ____
Date _____



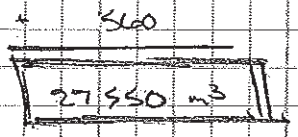
LONGITUDINAL CHANNEL SLOPE = 0.10%

AVG. END AREA = 2.55 m^2

LENGTH = 220 m

VOLUME = 561 m^3

∴ TOTAL QUALITY CONTROL VOLUME = 26 990



PEARSON ENGINEERING

Charter Construction Ltd.
West Lands, Orillia
Summary of VisualOTTHYMO Parameter

Surface Cover	=	Pasture	LD Res.	MD Res.	HD Res.	School	Commercial	SWM Pond		TIMP	CN
POST DEVELOPMENT	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		(% Impervious)	
Standhyds											
201	316,405	0	238,961	50,691	22,677	0	4,076	0		0.49	-
202	79,156	0	34,103	45,053	0	0	0	0		0.45	-
203	57,317	0	57,317	0	0	0	0	0		0.62	-
204	67,465	0	0	0	0	67,465	0	0		0.60	-
205	158,706	0	145,056	13,650	0	0	0	0		0.45	-
206	95,069	64,628	0	0	0	0	0	30,441		0.37	-
208	82,771	0	59,678	27,919	0	0	0	4,162		0.54	-
209	45,811	0	0	0	0	25,000	0	0		0.68	-
Post Total	902,700	64,628	535,115	137,313	22,677	92,465	4,076	4,162		0.50	-
Nashhyds											
101	248,000	248,000	0	0	0	0	0	0		-	54
102	153,000	153,000	0	0	0	0	0	0		-	62
207	346,045	346,045	0	0	0	0	0	0		-	59
Post Total	747,045	747,045	0	0	0	0	0	0		-	-

POST DEVELOPMENT	Total Area (m^2)	Hydrologic Soil Group	XIMP (% Impervious)	Tp (Hr)
Standhyds				
201	316,405	C	150.75	-
202	79,156	C	0.30	-
203	57,317	C	152.25	-
204	67,465	C	0.51	-
205	158,706	C	0.30	-
206	95,069	C	0.37	-
208	248,000	AB	156.00	-
209	45,811	C	0.68	-
Post Total	1,067,929	-	-	-
Nashhyds				
101	248,000	AB	-	0.75
102	153,000	AB	-	0.28
207	0	C	-	1.10
Post Total	401,000	-	-	-

Notes:
1. OTTHYMO parameter calculations shown on following pages for Catchments 201, 203, 206 to 209
2. Highlighted OTTHYMO modelling parameters based on TSH/RG Robinson's Stormwater Management Report, dated April 2007.
3. XIMP = 0.75 x TIMP unless otherwise stated on following pages.
4. A geotechnical investigation was not completed for the Trailside lands during the time of detailed design of the Stone Ridge Subdivision and as such Soil Group A was used in the pre-development condition which is considered conservative.

Charter Construction Ltd.
West Lands, Orillia
Calculation of Total Impervious

Area draining to Bass Lake SWM Pond

Catchment Area = 201

Total Catchment Area		=	316405	m^2									
Soil Type		=	C										
MD, HD, Com.	Imp. Area Coverage	=	75%										
	Lot Area	=	73368	m^2									
	Impervious Area	=	73368	x	75%								
		=	55026	m^2									
Commercial	Imp. Area Coverage	=	100%										
	Lot Area	=	4076	m^2									
	Impervious Area	=	4076	x	100%								
		=	4076	m^2									
Forest	Coverage	=	0%										
	Area	=	20022	m^2									
	Impervious Area	=	20022	x	0%								
		=	0	m^2									
Transcanada Pipeline	TCPL Area	=	13430	m^2									
(No Buildings within 10m of TCPL)													
	Impervious Area	=	13430	x	0%								
		=	0	m^2									
Road													
	Total ROW Area	=	69570										
Stoneridge Blvd	Total ROW	=	24570										
26m ROW	Asphalt Area	=	945	x	10								
945m Long		=	9450	m^2									
10m Asphalt width													
	Sidewalk Area	=	945	x	1.5	x	2						
		=	2835	m^2									
	Curb Area	=	945	x	0.5	x	2						
		=	945	m^2									
	Total Imp. Area	=	13230	m^2									
Local Roads	Total ROW	=	45000	m^2									
20m ROW	Asphalt Area	=	2,250	x	7.9								
7.9m asphalt width		=	17775	m^2									
2,250m long													
	Sidewalk	=	2,250	x	1.5								
		=	3375	m^2									
	Curb	=	2,250	x	0.5	x	2						
		=	2250	m^2									
	Driveways - 10m Lots	=	5.5	x	4	x	39	+	4.0	x	4	x	39
		=	858	m^2									
	Driveways - 12m Lots	=	5.5	x	6	x	94	+	4.0	x	6	x	93
		=	3102	m^2									
	Total Drivway	=	10m Lots	+	12m Lots								
		=	858	+	3102								
		=	3960										

Total Area	Total Imp. Area	=	27360	m^2				
	ROW Imp. %	=	13230	+	27360			
			69570					
		=	58%					
10m Lot	Min. Lot Area	=	300	m^2				
	House Coverage	=	45%					
	House Area	=	135	m^2				(Approx. 1450 ft^2 footprint)
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp. Area	=	135	+	28	+	4.5	
		=	168	m^2				
	No of Lots	=	78					
	% Total Imp. per lot	=	168					
			300					
		=	56%					
	Total Imp. Area	=	78	x	168			
	for 78 lots	=	13065	m^2				
12m Lot	Min. Lot Area	=	400	m^2				
	House Coverage	=	45%					
	House Area	=	180	m^2				(Approx. 1950 ft^2 footprint)
	Driveway	=	7	x	6			
		=	42	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	180	+	42	+	4.5	
		=	227	m^2				
	No of Lots	=	187					
	% Total Imp. per lot	=	227					
			400					
		=	57%					
	Total Imp. Area	=	187	x	227			
	for 187 Lots	=	42356	m^2				

Total Imperviousness for the Catchment Area 201

TIMP	=	MD/HD	+	ROW	+	30' Lot	+	40' Lot	+	Com	
						316405					
	=	55026	+	40590	+	13065	+	42356	+	4076	
						316405					
	=	155113									
		316405									
	=	**49%**									

Catchment Area = 203

Total Catchment Area		=	57317	m^2				
Soil Type		=	C					
MD, HD, Com.	Imp. Area Coverage	=	75%					
	Lot Area	=	0	m^2				
	Impervious Area	=	0	x	75%			
		=	0	m^2				
Commercial	Imp. Area Coverage	=	100%					
	Lot Area	=	0	m^2				
	Impervious Area	=	0	x	100%			
		=	0	m^2				
Forest	Coverage	=	0%					
	Area	=	0	m^2				
	Impervious Area	=	0	x	0%			
		=	0	m^2				
Transcanada Pipeline	TCPL Area	=	13430	m^2				
(No Buildings within 10m of TCPL)								
	Impervious Area	=	13430	x	0%			
		=	0	m^2				
Road								
Local Roads	Total ROW	=	17000	m^2				
20m ROW	Asphalt Area	=	850	x	7.9			
7.9m asphalt width		=	6715	m^2				
850m long								
	Sidewalk	=	850	x	1.5			
		=	1275	m^2				
	Curb	=	850	x	0.5	x	2	
		=	850	m^2				
	Driveways - 10m Lots	=	5.5	x	4	x	19	
		=	418	m^2				
	Driveways - 12m Lots	=	5.5	x	6	x	88	
		=	2904	m^2				
	Total Drivway	=	10m Lots	+	12m Lots			
		=	418	+	2904			
		=	3322					
Total Area	Total Imp. Area	=	12162	m^2				
	ROW Imp. %	=	12162 / 17000					
		=	72%					

10m Lot	Min. Lot Area	=	300	m^2				
	House Coverage	=	45%					
	House Area	=	135	m^2				(Approx. 1450 ft^2 footprint)
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp. Area	=	135	+	28	+	4.5	
		=	168	m^2				
	No of Lots	=	10					
	% Total Imp. per lot	=	168 / 300					
		=	56%					
	Total Imp. Area	=	19	x	168			
	for 19 lots	=	3183	m^2				
12m Lot	Min. Lot Area	=	400	m^2				
	House Coverage	=	45%					
	House Area	=	180	m^2				(Approx. 1950 ft^2 footprint)
	Driveway	=	7	x	6			
		=	42	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	180	+	42	+	4.5	
		=	227	m^2				
	No of Lots	=	88					
	% Total Imp. per lot	=	227 / 400					
		=	57%					
	Total Imp. Area	=	88	x	227			
	for 187 Lots	=	19932	m^2				

Total Imperviousness for the Catchment Area 203

TIMP	=	MD/HD	+	ROW	+	30' Lot	+	40' Lot	+	Com	/ 57317
	=	0	+	12162	+	3183	+	19932	+	0	/ 57317
	=	35277 / 57317									
	=	**62%**									

Catchment Area = 209

Trailside School (Calculate TIMP from Concept School site plan from School Board)

	School Site Area	=	25,000	m^2
	Impervious Area	=	17,058	m^2

Total Imperviousness for the Catchment Area 209

	TIMP	=	17,058 / 25,000	
		=	0.68	**%**

Assuming 68% imperviouness for the proposed public school in the catchment area 209 based on calculation for the proposed layout for the school block in the Trailside Devekopment.

Assume all impervious values are directly connected, therefore XIMP = TIMP = 0.68 %

Catchment Area = 208

Total Catchment Area		=	82771	m^2		(Including Future SWM Pond)							
Soil Type		=	AB										
MD	Imp. Area Coverage	=	75%										
	Lot Area	=	27919	m^2									
	Impervious Area	=	27919	x	75%								
		=	20939	m^2									
Street J and H													
	Total ROW	=	11000										
	Asphalt Area	=	550	x	7.9								
		=	4345	m^2									
	Sidewalk	=	550	x	1.5								
		=	825	m^2									
	Curb	=	550	x	0.5	x	2						
		=	550	m^2									
	Driveway	=	5.5	x	6	x	59	+	4.0	x	6	x	59
		=	1947	m^2									
	Total Area	=	7667	m^2									
	Total Imperviouness	=	7667 / 11000										
		=	70%										
12m Lot	Min. Lot Area	=	400	m^2									
	House Coverage	=	45%										
	House Area	=	180	m^2		(Approx. 1950 ft^2 footprint)							
	Driveway	=	7	x	6								
		=	42	m^2									
	Walkway	=	3	x	1.5								
		=	4.5	m^2									
	Total Imp.Area	=	180	+	42	+	4.5						
		=	227	m^2									
	No of Lots	=	33										
	% Total Imp. per lot	=	227 / 400										
		=	57%										
	Total Imp. Area	=	33	x	227								
		=	7475	m^2									

1/2 - 12m Lot	Min. Lot Area	=	200	m^2				
	House Coverage	=	45%					
	House Area	=	90	m^2				
	Driveway	=	7	x	6			
		=	42	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	90	+	42	+	4.5	
		=	137	m^2				
	No of Lots	=	16					
	% Total Imp. per lot	=	137 / 200					
		=	68%					
	Total Imp. Area	=	16	x	137			
		=	2184	m^2				
Townhouses	Min. Lot Area	=	185	m^2				
	House Coverage	=	45%					
	House Area	=	83.3	m^2		(Approx. 1950 ft^2 footprint)		
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	83.25	+	28	+	4.5	
		=	116	m^2				
	No of Lots	=	21					
	% Total Imp. per lot	=	116 / 185					
		=	63%					
	Total Imp. Area	=	21	x	116			
		=	2431	m^2				

Assuming 100% Imperviouness for Future SWM Pond

Future SWM Pond Area	=	4,162	m^2		
TIMP	=	100	**%**		
Impervious Area	=	4,162	x	100	
	=	4,162	m^2		
Treed Area	=	0	m^2		
Coverage	=	0	**%**		
Impervious Area	=	0	x	0	
	=	0	m^2		
	=	4,162	m^2		

Total Imperviousness for the Catchment Area 208

TIMP	=	MD	+	ROW	+	40' Lot	+	Towns	+	Towns
				Total Catchment Area						
	=	20939	+	7667	+	9659		2431	+	4,162
				82771						
	=	44858 / 82771								
	=	**0.54**	**%**							

Catchment Area = 206

Soil Type	=	C		
Total Area	=	95069	m^2	

Assuming 100% Imperviouness for Existing Bass Lake SWM Pond

Bass Lake SWM Pond Area	=	30,441	m^2	
TIMP	=	100	**%**	
Impervious Area	=	30,441	x	100
	=	30,441	m^2	
Treed Area	=	34057	m^2	
Coverage	=	0	**%**	
Impervious Area	=	34,057	x	0
	=	0	m^2	
Park	=	30572	m^2	
Coverage	=	15	**%**	
Impervious Area	=	30,572	x	15
	=	4,586	m^2	

Total Imperviousness for the Catchment Area 206

$$TIMP = \frac{\text{Pond Area} + \text{Treed Area} + \text{Park}}{\text{Total Catchment Area}}$$

$$= \frac{30441 + 0 + 4586}{95069}$$

$$= \frac{35026}{95068.98}$$

$$= \mathbf{0.37}\ \%$$

Assume all impervious values are directly connected, therefore XIMP = TIMP = 0.37 %

Catchment Area = 207

Soil Type	=	AB								
Rear Yard Area	=	24922			CN	=	69			
Pasture/ Forest Area	=	321123			CN	=	58			
Total Area	**=**	**346045**	**m^2**		CN	=	(24922	x	69 +	321123 x 58) / 346045
					CN	**=**	**59**			

Charter Construction Ltd.
West Lands, Orillia
Calculation of Total Impervious

Area draining to Champlain SWM Pond

Catchment Area = 702 A

Total Catchment Area		=	110,007	m^2						
Forest	Coverage	=	0%							
	Area	=	25968	m^2						
	Impervious Area	=	25968	x	0%					
		=	0	m^2						
Park	Coverage	=	20%							
	Area	=	7400	m^2						
	Impervious Area	=	7400	x	20%					
		=	1480	m^2						
Road										
Local Roads	Total ROW	=	23100	m^2						
20m ROW	Asphalt Area	=	1,155	x	7.9					
7.9m asphalt width		=	9125	m^2						
1,155m long										
	Sidewalk	=	1,155	x	1.5					
		=	1733	m^2						
	Curb	=	1,155	x	0.5	x	2			
		=	1155	m^2						
	Driveways	=	12m	+	10m	+	semi	+	twn hse	
		=	41		42		30		23	
		=	1169	+	1197	+	855	+	328	
		=	3548							((dwy/2)*w*5.5)+((dwy/2)*w*4)
Total Area	Total Imp. Area	=	15560	m^2						
	ROW Imp. %	=	15560 / 23100							
		=	67	%						
12m Lot	Min. Lot Area	=	400	m^2						
	House Coverage	=	45%							
	House Area	=	180	m^2		(Approx. 1950 ft^2 footprint)				
	Driveway	=	7	x	6					
		=	42	m^2						
	Walkway	=	3	x	1.5					
		=	4.5	m^2						
	Total Imp.Area	=	180	+	42	+	4.5			
		=	227	m^2						
	No of Lots	=	41							
	% Total Imp. per lot	=	227 / 400							
		=	57%							
	Total Imp. Area	=	41	x	227					
		=	9287	m^2						

10m Lot	Min. Lot Area	=	300	m^2				
	House Coverage	=	45%					
	House Area	=	135	m^2				(Approx. 1450 ft^2 footprint)
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp. Area	=	135	+	28	+	4.5	
		=	168	m^2				
	No of Lots	=	42					
	% Total Imp. per lot	=	168 / 300					
		=	56%					
	Total Imp. Area	=	42	x	168			
		=	7035	m^2				
Semi Unit	Min. Lot Area	=	300	m^2				
	House Coverage	=	45%					
	House Area	=	135	m^2				(Approx. 1450 ft^2 footprint)
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp. Area	=	135	+	28	+	4.5	
		=	168	m^2				
	No of Lots	=	27					
	% Total Imp. per lot	=	168 / 300					
		=	56%					
	Total Imp. Area	=	27	x	168			
		=	4523	m^2				
1/2 Semi Unit	Min. Lot Area	=	150	m^2				
	House Coverage	=	45%					
	House Area	=	67.5	m^2				(Approx. 1450 ft^2 footprint)
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp. Area	=	67.5	+	28	+	4.5	
		=	100	m^2				
	No of Lots	=	33					
	% Total Imp. per lot	=	100 / 300					
		=	33%					
	Total Imp. Area	=	33	x	100			
		=	3300	m^2				

Townhouses	Min. Lot Area	=	185	m^2				
	House Coverage	=	45%					
	House Area	=	83.25	m^2			(Approx. 1950 ft^2 footprint)	
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	83.25	+	28	+	4.5	
		=	116	m^2				
	No of Lots	=	22					
	% Total Imp. per lot	=	116 / 185					
		=	63%					
	Total Imp. Area	=	22	x	116			
		=	2547	m^2				
1/2 Townhouses	Min. Lot Area	=	92.5	m^2				
	House Coverage	=	45%					
	House Area	=	42	m^2			(Approx. 1950 ft^2 footprint)	
	Driveway	=	7	x	4			
		=	28	m^2				
	Walkway	=	3	x	1.5			
		=	4.5	m^2				
	Total Imp.Area	=	42	+	28	+	4.5	
		=	74	m^2				
	No of Lots	=	24					
	% Total Imp. per lot	=	74 / 92.5					
		=	80%					
	Total Imp. Area	=	24	x	74			
		=	1779	m^2				

Total Imperviousness for the Catchment Area 702A

	TIMP	=	Park / 110,007	+	ROW	+	40' Lot	+	30' Lot	+	Semi	+	Townhouse
		=	1480 / 110,007	+	15560	+	9287	+	7035	+	7823	+	4326
		=	45510 / 110,007										
		=	**0.41**	**%**									

Find Directly Connected (XIMP)

	Asphalt Area	=	9125	m^2						
	Curb Area	=	1155	m^2						
	Driveways	=	3548	m^2						
	Driveways Lots	=	12m	+	10m	+	Semi	+	Towns	
		=	1722	+	1176	+	1680	+	1288	
		=	5866	m^2						
	Total Area	=	Asphalt	+	Curb	+	Driveways	+	Driveways	
		=	9125	+	1155	+	3548	+	5866	
		=	19694	m^2						
	XIMP	=	Total Area / Catchment Area							
		=	19694 / 110,007							
		=	18%							

Charter Construction Ltd.
West Lands, Orillia
Runoff Coefficient

Runoff Coefficient Calc for 702 A

Runoff Coefficients As per Design Manual Section 4.2.3.1

	Area (m2)	**RC**	A*C
Forest	26,000	0.15	3900
Single Family	50,800	0.45	22860
Park	7,400	0.35	2590
Semi Detached	8,800	0.70	6160
Townhouses	17,100	0.60	10260
Total Area	110,100		45,770

$$\text{Weighted RC} = \frac{A*C}{\text{Total Area}} = \frac{45{,}770}{110{,}100} = 0.42$$

Charter Construction Ltd.
West Lands, Orillia
Water Balance Calculations

Pre Development Infiltration

Precipitation data taken from Environment Canada information for the Orillia rainfall station

Yearly Precipitation	=	990.0	mm

The landscape type for this site is Cultivated in Silty Sand. An average hydrologic soil group of AB was used. Using Table 3.1 of the MOE's SWM Planning and Design Manual, the infiltration factor can be calculated by dividing the depth of the infiltration with the depth of the total Precipitation, resulting in 21% for Cultivated. The pre development infiltration is then calculated as follows:

Site Cultivated Area	=	10.93	ha			
Cultivated Area Infiltration Volume	=	10.93	x	990	x	0.21
	=	22,723	m^3			

The landscape type for this site is Cultivated and Forest in Silt Loam. An average hydrologic soil group of C was used. Using Table 3.1 of the MOE's SWM Planning and Design Manual, the infiltration factor can be calculated by dividing the depth of the infiltration with the depth of the total Precipitation, resulting in 21% for Cultivated and 25% for Forest. The pre development infiltration is then calculated as follows:

Site Cultivated Area	=	40.73	ha			
Site Forest Area	=	12.69	ha			
Site Grassed Area	=	7.03	ha			
Cultivated Area Infiltration Volume	=	40.73	x	990	x	0.21
	=	84,678	m^3			
Forest Area Infiltration Volume	=	12.69	x	990	x	0.25
	=	31,408	m^3			
Grassed Area Recharge Volume	=	7.03	x	990	x	0.29
	=	20,183	m^3			
Total Infiltration Volume	=	84,678	+	31,408	+	20,183
	=	136,269	m^3			

From the hydrogeologic report, we expect that existing infiltration on site to be less than the values given in the Table 3.1 and we have applied 25% reduction to the total infiltration values,

Total Infiltration Volume	=	136,269	x	0.75	+	22,723
	=	124,925	m^3			

Therefore, 124,925 m^3 per year of recharge volume is required for the proposed project

Post Development Recharge

Using Table 3.1 of the MOE's SWM Planning & Design Manual, the infiltration amount for Urban Lawns is approximately

Site Grassed Area	=	4.19	ha			
Grassed Area Infiltration Volume	=	4.19	x	990	x	0.19
	=	7,887	m^3			
Site Grassed Area	=	22.00	ha			
Site Forest Area	=	6.41	ha			
Grassed Area Infiltration Volume	=	22.00	x	990	x	0.19
	=	41,375	m^3			
Forest Area Infiltration Volume	=	6.41	x	990	x	0.25
	=	15,855	m^3			
Total Infiltration Volume	=	41375	+	15855		
	=	57,231	m^3			

From the hydrogeologic report, we expect that existing infiltration on site to be less than the values given in the Table 3.1

Total Infiltration Volume	=	57,231	x	0.75	+	7,887
	=	50,810				

Therefore, the remaining deficit volume is:

Deficit Volume	=	124,925	-	50,810
	=	74,115	m^3	

Commercial, Medium and High Density Rooftop

It is proposed to infiltrate 15 mm from the roof top area

Roof Top Area	=	(Total Med & Commercial Block Areas) x Lot Coverage		
	=	154,800	x	25%
	=	38,700	m^2	

Find storage volume required for rainfall event of 15 mm

Roof Top Area	=	38,700	m^2	
Rainfall Depth	=	15	mm	
Storage Volume Req'd	=	A	x	D
	=	38,700	x	15
	=	581	m^3	

Therefore, a total of 581 m3 of storage volume is required on the commercial/medium density blocks.

As the 15 mm storm is equivalent to 95% of annual precipitation, the post development infiltration volume provided by the

Precipitation Depth	=	990.0	x	95%
	=	940.5	mm	
Com./Med. Density Rooftop Infitration Volume	=	940.5	x	38,700
	=	36,397	m^3	

Therefore, post development infiltration required for residential lots is as follows:

Residential Post development Infiltration req'd.	=	Deficit Volume	-	Com./Medium Density
	=	74,115	-	36,397
	=	37,717	m^3	

Find the depth of annual precipitation required to infiltrate 37717 m³ from the residential rooftop area into the ground.

Assuming 35% coverage on total rooftop area

Total Lot Area	=	303,700		
Rooftop %	=	35.00		
Area contributing to the infiltration locations	=	303,700	x	0.35
	=	106,295	m^2	

Annual Precipitation Depth Required

Req'd Precipitation Depth	=	37,717	m^3		
		106,295	m^2		
	=	354.8	mm		

Assuming the average runoff for the contributing area is 0.95 the following yearly precipitation depth is required to get 354.8

Precipitation Depth	=	355	mm
		0.95	
	=	374	mm

Find Percent of Annual Precipitation that Req'd Precipitation Depth represents:

Annual Precipitation for Study Area	=	990.0	mm
% Annual Precipitation	=	374	mm
		990.0	mm
	=	38%	

From MOE Figure C-2, 38% of annual precipitation occurs for storm events of 5 mm or less.

Contributing Rooftop Area	=	106,295	m^2		
Precipitation Depth	=	5	mm		
Storage Volume Req'd	=	A	x	D	
	=	106,295	x	5	
	=	531.5	m^3		
Number of lots	=	680			
Storage Volume per lot	=	531.5			
		680			
	=	0.8	m^3		
Soakaway Pit Volume	=	0.8			
		0.4			
	=	1.95	m^3		

Therefore, the Soakaway pit volume for each lot will be 1.95 m3.

Find the number of lots required with an infiltration target of 12.5mm over the residential lots:

As the 12.5 mm storm is equivalent to 78% of annual precipitation, the post development infiltration volume provided by the

Precipitation Depth	=	990	x	78%	
	=	772.2	mm		
Required Precipitation Depth	=	772	x	0.78	
	=	602.3	mm		
Required total rooftop area infiltration	=	37,717			
		602.3			
	=	62,621	m^2		
Average size of a house	=	Rooftop Area			
		Number of lots			
	=	106,295			
		680			
	=	156.3	m^2		
Therefore, Required total number of lots	=	62,621			
		156.3			
	=	401	lots		

Find the storage volume for the Soakaway pit for 401 lots,

Contributing Rooftop Area	=	62,621	m^2	
Precipitation Depth	=	12.5	mm	
Storage Volume Req'd	=	A	x	D
	=	62,621	x	12.5
	=	782.8	m^3	
Number of lots	=	401		
Storage Volume per lot	=	782.8		
		401		
	=	2.0	m^3	
Soakaway Pit Volume	=	2.0		
		0.4		
	=	4.88	m^3	

Therefore, the Soakaway pit volume for each lot will be 4.88 m3.

Charter Construction Ltd.
West Lands, Orillia
Volume Control Calculations

Total Impervious Area	=	Total Area	x	Total Imperviousness
	=	607,026	x	0.51
	=	309,583	m^2	
Total Storage Volume for 401 lots	=	Total no. of lots	x	Storage Volume per lot
	=	401	x	2
	=	802	m^3	
Total Storage Volume for Comm, MD & HD	=	581	m^3	(From Water Balance sheet)

Find equivalent depth of runoff over Impervious Area

$$\text{Equivalent Depth} = \frac{\text{Total storage volume for lots + Comm, HD \& MD}}{\text{Total Impervious Area}}$$

$$= \frac{802 + 581}{309{,}583}$$

$$= \frac{1{,}383\ m^3}{309{,}583\ m^2}$$

$$= 4.5\ mm$$

West Ridge Trailside
Phosphorus Budget

Oro Creeks North	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Phosphorus Export (kg/ha/year)	0.12	1.32	0.10	1.82	0.26	0.36

Pre-Development Condition

25.9 ha existing Stoneridge Subdivision

	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Area (ha)	0.87	20.83	4.21	0.00	0.00	0.00
Total P (kg)	0.10	27.50	0.42	0.00	0.00	0.00

Wet Detention Ponds

Total P (kg) from Ex. Stoneridge Subdivision:	28.02
Wet Detention Ponds Proficiency (%):	63
P Removed (kg):	17.65
P Remaining (kg):	10.37

71.4 ha proposed Trailside Subdivision

	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Area (ha)	7.03	0.00	12.69	0.00	2.06	51.66
Total P (kg)	0.84	0.00	1.27	0.00	0.54	18.60

Total P (kg) from Proposed Trailside Subdivision: 21.25

Total Pre-Development P (kg)	**=**	**10.37**	**+**	**21.25**		
	=	**31.62**				

Post-Development Condition (Uncontrolled):

71.4 ha Proposed Trailside Subdivision

	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Area (ha):	4.94	54.57	6.41	4.97	2.06	0.00
Total P (kg) :	0.59	72.03	0.64	9.05	0.54	0.00

Total P (kg) from Proposed Trailside Subdivision: 82.85

Total P (kg) from Existing Stoneridge Subdivision: (After SWM Pond Treatment) 10.37

Total Uncontrolled Post-Development (kg)	**=**	**82.85**	**+**	**10.37**		
	=	**93.21**				

Post-Development Condition (Controlled):

Area Draining to Rooftop Infiltration	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Area (ha):	0.00	10.63	0.00	3.87	0.00	0.00
Total P (kg) :	0.00	14.03	0.00	7.04	0.00	0.00

Soakaway Infiltration	
Total P (kg):	21.07
Soakaway Infiltration Proficiency (%):	60
P Removed (kg):	12.64
P Remaining (kg):	8.43

Area Draining to Wet Pond	Hay / Pasture	High Intensity Residential	Forest	High Intensity Commercial / Industrial	Open Water	Cropland
Area (ha):	5.81	64.77	10.62	1.10	2.06	0.00
Total P (kg) :	0.70	85.50	1.06	2.00	0.54	0.00

Wet Detention Ponds	
Total P (kg):	89.79
Wet Detention Ponds Proficiency (%):	63
P Remaining (kg):	33.22

Total Post-Development P (kg)	**=**	**8.43**	**+**	**33.22**
	=	**41.65**		

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West Lands, Orillia
Soakaway Pit Calculations

Storage Volume Required Using 5mm Across the Site Storm Event

Rooftop Area (A)	=	156.32	m2
Storm Event (D)	=	5.0	mm
Volume (V)	=	AxD	
V	=	0.78	m^3

Calculate Design Infiltration Rate

Infiltration Rate at the bottom of the BMP	=	15	mm/hr
Infiltration Rate at the least permeable soil	=	15	mm/hr
Ration of mean measured Infiltration Rates	=	15 / 15	
	=	1	
Safety correction factor	=	2.5	
Design Infiltration Rate (i)	=	15 / 2.5	
	=	6.0	mm/hr

Maximum Allowable Depth for bioretention filter as per TRCA requirements is as follows:

Design Infiltration Rate (i)	=	6.0	mm/hr
Drawdown time (t_s)	=	48	hr
Porosity (V_r)	=	0.4	for clear stone
Maximum Depth ($d_{r\,max}$)	=	$i \times t_s$ / V_r	
	=	720	mm

Infiltration Trench Bottom Area for bioretention filter as per TRCA requirements is as follows:

Water Quality Volume (WQV)	=	0.8 / 1	m^3 total soakaway pits
		0.8	m^3
Stone Reservoir Depth (d_r)	=	0.50	m
Porosity (V_r)	=	0.40	for clear stone
Footprint Surface Area (A_f)	=	WQV / $d_r \times V_r$	
	=	3.9	m^2

Therefore, soakaway pits with an equivalent dimension of 4 x 1 x 0.5 m is proposed for the project

Charter Construction Ltd.
West Lands, Orillia
Quality Control Calculations - Proposed SWM Pond

Find Wet Cell Volumes Required for Proposed Subdivision

Area	=	7.21	ha
% Total Impervious	=	50%	

From MECP's SWMPD Manual Table 3.2, Water Quality Requirements based on Receiving Waters:

Level 1 Quality Volumes for a Wet Pond:

35%	=	140	m^3/ha
55%	=	190	m^3/ha

Therefore, from extrapolation:

50%	=	178	m^3/ha

40 m^3/ha is for extended detention, therefore, minimum required permanent pool volume is: 178 m^3/ha - 40 m^3/ha = 138 m^3/ha.

Volume	=	Area	x	Required Vol.
	=	7.21	x	138
Total Volume Required	=	991	m^3	
Total Volume Provided	=	1,400	m^3	

Forebay Calculations for proposed Sidell Residential Subdivision

Settling Calculations as per MECP Equation 4.5:

Length to Width Ratio of Forebay (r)	=	2.50	
Peak Flow (2 Year) From Pond (Q)	=	0.14	m^3/s
Settling Velocity (V)	=	0.0003	m/s
Forebay Length (D)	=	$\frac{\sqrt{(rQ)}}{V}$	
	=	**34.2**	**m**

Dispersion Length as per MECP Equation 4.6:

10 Year Inlet Flow Rate (Q)	=	0.87	m^3/s
Depth of Permanent Pool (d)	=	1.68	m
Desired Velocity (V)	=	0.50	m/s
Dispersion Length	=	$\frac{8Q}{dV}$	
	=	**8.3**	**m**

Minimum Forebay Deep Zone Bottom Width as per MECP Equation 4.7:

Dispersion Length	=	8.3	m
Width	=	Dispersion Length / 8	
	=	**1.0**	**m**

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Charter Construction Ltd.
West Lands, Orillia
Quatity Control Calculations

Area Draining to Bass lake Pond

206

Area	=	9.50	ha
Impervioness	=	7.5	%

201

Area	=	31.64	ha
Impervioness	=	54	%

209

Area	=	4.58	ha
Impervioness	=	68	%

Total Area = 9.50 + 31.64 + 4.58

= 45.72 ha

$$\% \text{ Impervious} = \frac{9.50 \times 7.5 + 31.64 \times 54 + 4.58 \times 68}{45.72}$$

= 45.74 %

Table 3.2 Water Quality Storage Requirements are as follows:

Level 1 Quality Volumes for a Wet Pond:

35%	=	140	m^3/ha
55%	=	190	m^3/ha

Therefore, from interpolation:

45.74%	=	167	m^3/ha

40 m^3/ha is for extended detention, therefore, minimum required permanent pool volume is: 167 m^3/ha - 40 m^3/ha = 127 m^3/ha.

Required Storage Volume = 123.75 m^3/ha (As per TSH report, Water Quality Calculation)

Therefore, Extra Volume Required = 127 - 123.75

= 3.25 m^3/ha

Volume required for 45.72 ha = 3.25 x 45.72

= 148.59 m^3

As per TSH report the provided permanent pool volume is 12083 m3 and the required volume is 10148 m3. Therefore, the Bass Lake SWM Pond will have enough storage capacity for extra 148.59 m3.

RECEIVED
SEP 12 2005 RGR

File No. 440-04139-46(12

Ministry of the Environment / Ministère de l'Environnement

Ontario

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 8918-6EVLMD
Issue Date: September 6, 2005

Charter Construction Limited
PO Box 2088
Orillia, Ontario
L3V 6R9

Site Location: Stone Ridge Subdivision Phase 1
Lot 6 to 8, Concession 2
Orillia City, County of Simcoe, Ontario

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

Proposed Works:

The existing Champlain Stormwater Management Facility (SWM) is designed as an end-of-pipe wet pond facility with an extended detention component. As outlined in the Functional Servicing Report (FSR), extended detention of the proposed development will require an alteration of the Facility or, additional excavation to achieve the storage requirements.

Construction of the Champlain SWM Facility began in 1998 with the construction of the quality control components, including the outlet works, as well as the construction of extended detention to provide quantity control. Under the original design the Champlain SWM Facility was to control 227.6 ha. of land, with a total volume of 286,000 m^3, and a release rate of 0.42 m/s. The revised catchment area will be increased to 267 ha., requiring a total volume of 342,900 m^3. This will be released at a rate of 0.41 m/s . The pond is currently to a volume of approximately 264,000 m^3.

Construction work within the SWM facility will be completed in phases in conjunction with the development of the proposed Stone Ridge Residential Subdivision.

Phase 1 pond work to be completed by the developer in conjunction with development of Phase 1 of the Stone Ridge Subdivision includes the following:

- Excavation of about 21,000 m^3 to provide a total quantity control (extended detention) volume of 285,300 m^3. Excavation is to be completed between the inlet channel from Hunter Valley Road and the sediment forebay only;
- Construction of a wetland/low flow channel from the sediment forebay inlet to the convergence point of the 3 pond inlet channels;

- Construction of the pond inlet channel from Hunter Valley Road to the proposed wetland/low flow channel;
- Re-grading of 2 inlet channels that convey flow from West Ridge Boulevard from the existing top of pond slope to the proposed wetland/low flow channel;
- Re-grading of the area between the inlet channels from Hunter Valley Road and West Ridge Boulevard to establish ultimate toe of slope and top of slope for pond;
- Re-grading of the area between the inlet channels from West Ridge Boulevard and Frost Court to establish ultimate toe of slope and top of slope for pond.

Phase 2, or ultimate development pond work, will be completed by the developer in conjunction with development of Phase 2 of the Stone Ridge Subdivision. Pond construction work required at this time includes the following:

- Excavation of about 58,000 m^3 to provide a total quantity control (extended detention) volume of 343,000 m^3. Excavation is to be completed in the area between the inlet channel from Hunter Valley Road and the sediment forebay as well as in the area between the inlet channel from Frost Court and the permanent pool cell (forebay);
- Excavation/re-grading of the area between the inlet channel from Frost Court and the permanent pool cell (forebay) to establish the ultimate toe of slope and top of slope for the pond.

Existing Works:

Stormwater management facility and appurtenances to be constructed to serve the developments in the Champlain Drainage Basin, to be located in Part of Lot 6 and Lot 7, Concession 3, in the City of Orillia, as follows:

- A stormwater detention pond with sediment forebays, a wetland cell and outlet flow control structures; providing a permanent pool volume of 13 400 m^3 and extended detention storage volume of 9 100 m^3 for quality control of the first flush of a storm event and additional flow attenuation storage fro quantity control of post-development peak runoff from the Champlain Drainage Basin to the existing downstream Inch Stormwater Management System as indicated below:

Storm Event	Post-development Peak Flow (controlled)	Total Storage
100 yr	0.24 cubic metres	114 000 cubic metres
Timmins	0.42 cubic metres	286 000 cubic metres

all in accordance with:

1) the Background Report for Stormwater Management in the Champlain Drainage Basin City of Orillia, Design Brief and engineering plans submitted by the Engineering Department, City of Orillia, and
2) the application dated July 12, 2005 and received July 18, 2005, including final plans and specifications prepared by Steve Norwood, C.E.T., Totten Sims Hubicki Associates (1997) Limited.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following

definitions apply:

1. "*Certificate*" means this entire Certificate of Approval document, issued in accordance with Section 53 of the *Ontario Water Resources Act*, and includes any schedules;

2. "*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

3. "*Ministry*" means the Ontario Ministry of the Environment;

4. "*Owner*" means Charter Construction Limited and includes its successors and assignees; and

5. "*Works*" means the sewage works described in the *Owner*'s application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate*.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

1.1 The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

1.2 Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate*.

1.3 Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

1.4 Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

1.5 The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Certificate* shall not be affected thereby.

2. EXPIRY OF APPROVAL

2.1 The approval issued by this *Certificate* will cease to apply to those parts of the *Works* which have not

been constructed within five (5) years of the date of this *Certificate*.

3. OPERATION AND MAINTENANCE

3.1 The *Owner* shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the stormwater works do not constitute a safety or health hazard to the general public.

3.2 The *Owner* shall undertake an inspection of the condition of the stormwater management system, at least once a year, and undertake any necessary cleaning and maintenance to ensure that sediment, debris and excessive decaying vegetation are removed from the above noted stormwater management system to prevent the excessive build-up of sediment, debris and/or decaying vegetation to avoid reduction of capacity of the pond. The *Owner* shall also regularly inspect and clean out the inlet to and outlet from the works to ensure that these are not obstructed.

3.3 The *Owner* shall prepare operational manual which should include, but not limited to, frequency and method of clean-out of stormwater management works within six (6) months from the date of issuance of this *Certificate* or the commissioning of the works. The *Owner* shall keep the operations manual up to date with such revisions as may be required. Upon request, the *Owner* shall make the manual available for inspection by *Ministry* personnel and furnish a copy to the *Ministry*.

3.4 The *Owner* shall maintain a logbook to record the results of all inspections and any cleaning and maintenance operations undertaken and shall make the logbook available for inspection by the *Ministry* upon request.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the *Owner* his/her responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate*.

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3.1 is imposed because it is not in the public interest for the *Director* to approve facilities which, by reason of potential health and safety hazards do not generally comply with legal standards or approval requirements falling outside the purview of this *Ministry*.

4. Condition 3.2 is included as regular inspection and necessary removal of sediment and excessive decaying vegetation from this approved stormwater management system are required to mitigate the impact of sediment, debris and/or decaying vegetation on the treatment capacity of the works. It is also required to ensure that adequate storage is maintained in the stormwater management facilities at all

times as required by the design, and to prevent stormwater impounded in the works from becoming stagnant.

5. Conditions 3.3 and 3.4 are included to ensure that the stormwater management facility is operated and maintained to function as designed.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 3-0115-98-006 issued on March 9, 1998

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* **Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 6th day of September, 2005

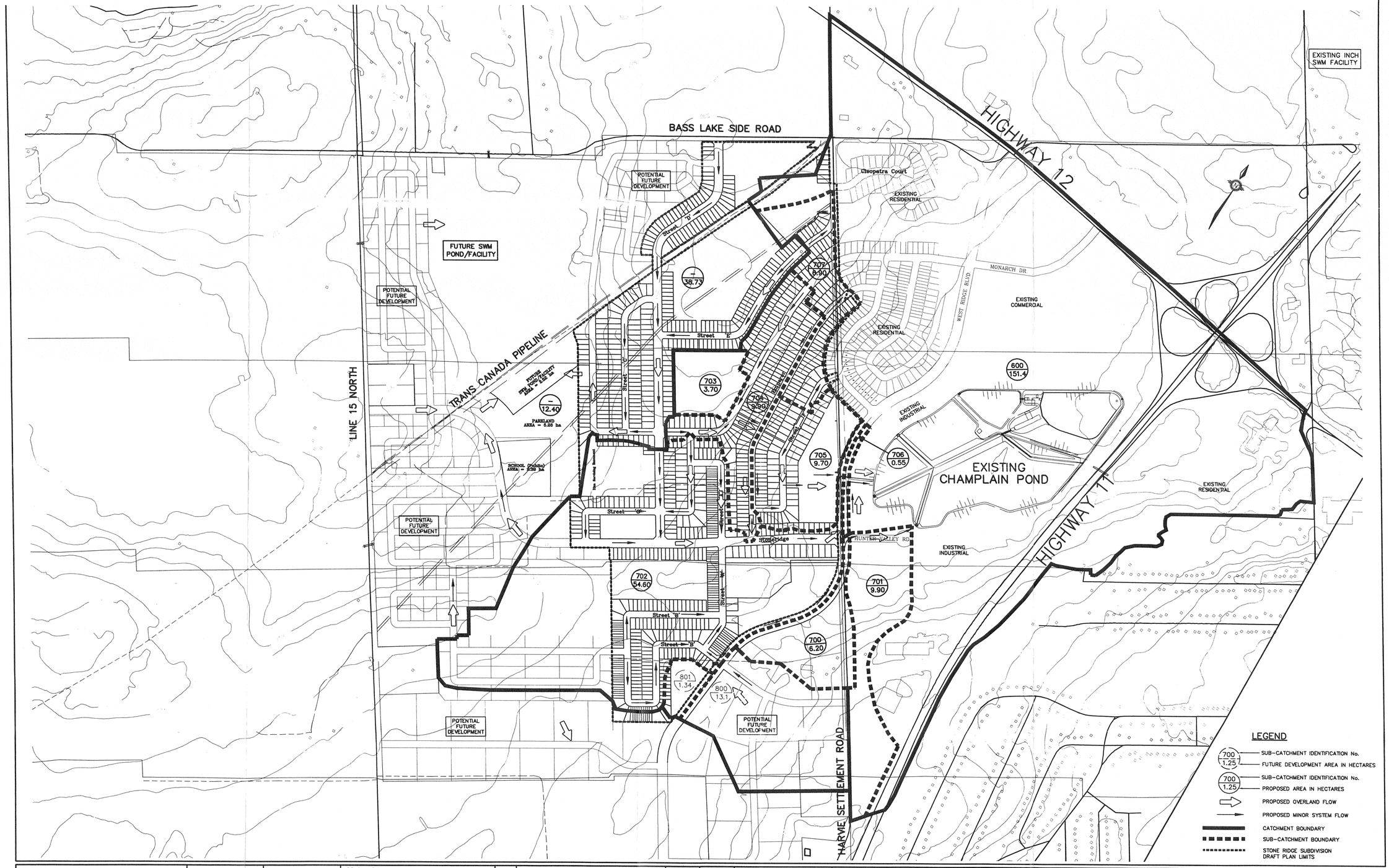
THIS CERTIFICATE WAS MAILED
ON Sept. 8, 2006
JC
(Signed)

A. Ahmed

Aziz Ahmed, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

DS/

c: District Manager, MOE Barrie District Office
C. Cannon, City of Orillia
G. Harriss, Senior Project Technologist, City of Orillia
H. Glavic, P.Eng., Charter Construction Limited
Steve Norwood, C.E.T., Totten Sims Hubicki Associates (1997) Limited ✓



L:\LandProjects\0413920\dwg\external storm drainage area plan.dwg, STM-2B, 03/31/2005 01:08:38 PM, phammell

LICENSED PROFESSIONAL ENGINEER
M.W. DEJEAN
PROVINCE OF ONTARIO

BENCHMARK:

NO.	REVISIONS	DATE	INITIAL

Approved

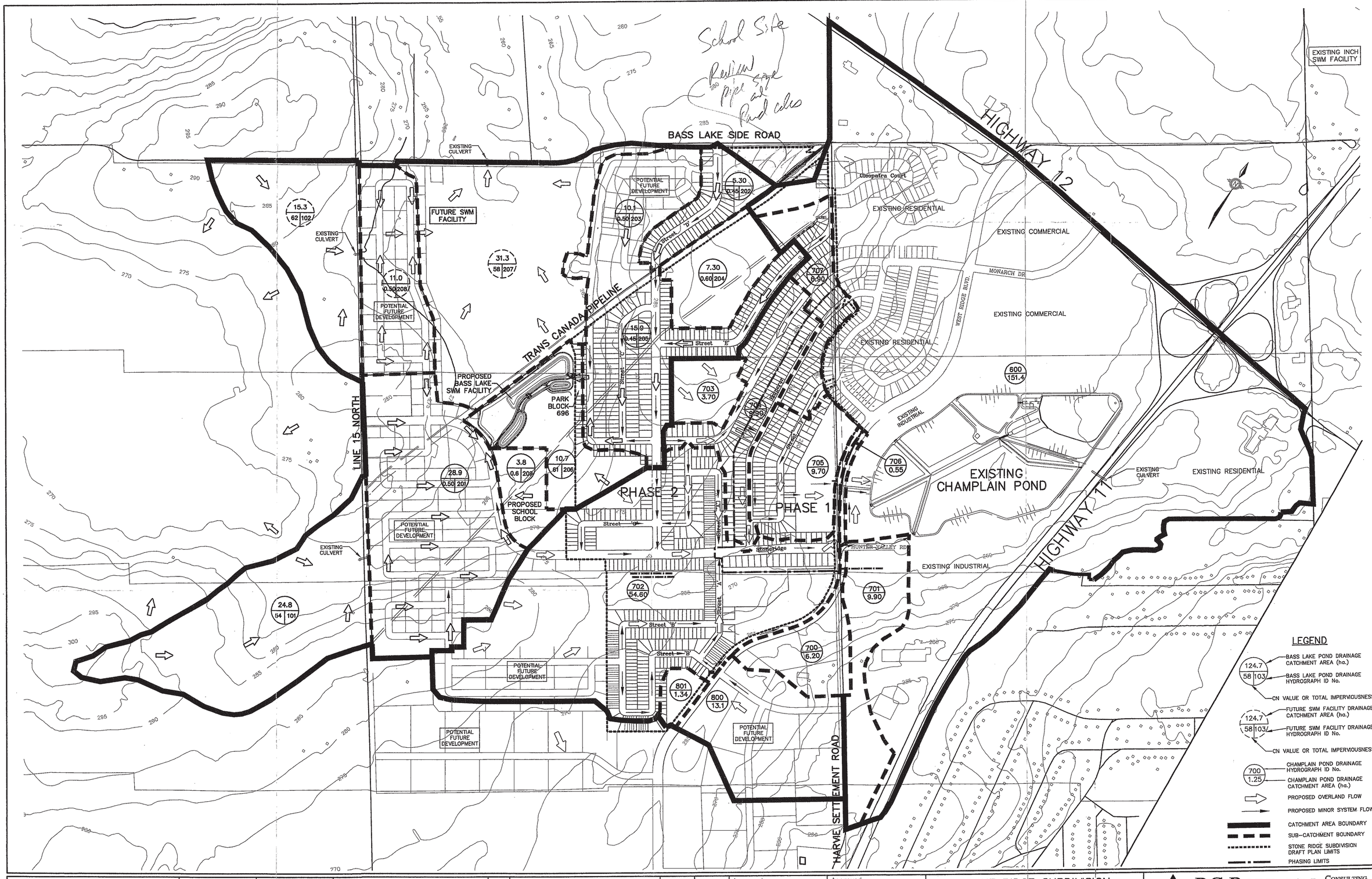
Approved

STONE RIDGE SUBDIVISION
CHARTER CONSTRUCTION LTD.
CITY OF ORILLIA FILE No. D12-S55

ULTIMATE POST DEVELOPMENT
STORM DRAINAGE PLAN

RG ROBINSON AND ASSOCIATES (BARRIE) LTD
CONSULTING ENGINEERS AND PLANNERS
10 High Street, Suite 200, Barrie, Ontario (705) 721-9222

SCALE: 1:5000		4400413920	
DESIGN PH	CHECKED MD	DWG. Nº	STM-2B
DRAWN KS	DATE FEB 2005		



BENCHMARK:

NO.	REVISIONS	DATE	INITIAL

Approved

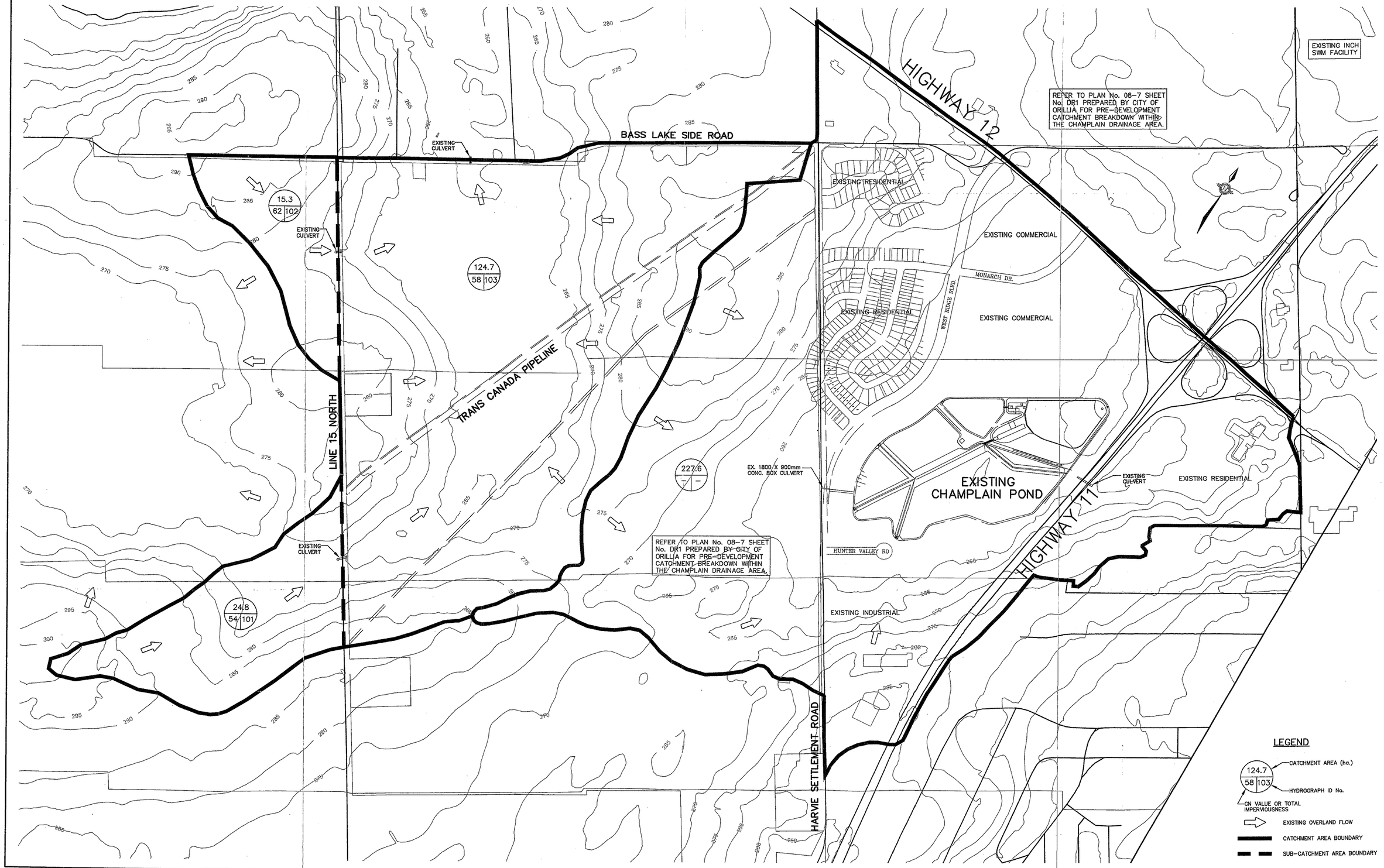
Approved

STONE RIDGE SUBDIVISION
CHARTER CONSTRUCTION LTD.
CITY OF ORILLIA FILE No. D12-S55

POST DEVELOPMENT
STORM DRAINAGE PLAN

RG ROBINSON AND ASSOCIATES (BARRIE) LTD
CONSULTING ENGINEERS AND PLANNERS
10 High Street, Suite 200, Barrie, Ontario (705) 721-9222

SCALE: 1:5000			440-04139-20
DESIGN J.C.	CHECKED Y.S.		
DRAWN K.S.	DATE APRIL 2007		DWG. Nº STM-4



BENCHMARK:

NO.	REVISIONS	DATE	INITIAL

Approved

Approved

STONE RIDGE SUBDIVISION
CHARTER CONSTRUCTION LTD.
CITY OF ORILLIA FILE No. D12-S55

PRE DEVELOPMENT
STORM DRAINAGE PLAN

RG ROBINSON AND ASSOCIATES (BARRIE) LTD
CONSULTING ENGINEERS AND PLANNERS
10 High Street, Suite 200, Barrie, Ontario (705) 721-9222

SCALE: 1:5000			440-04139-20
DESIGN J.C.	CHECKED Y.S.		
DRAWN K.S.	DATE APRIL 2007		DWG. Nº STM-3

Figure C.1 Annual Precipitation Event Distribution

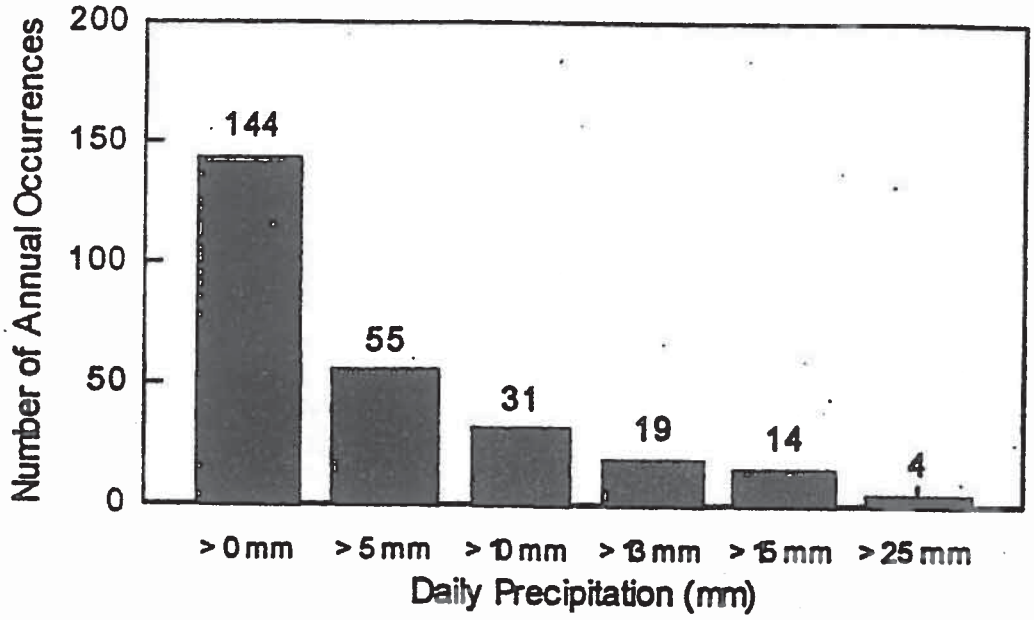
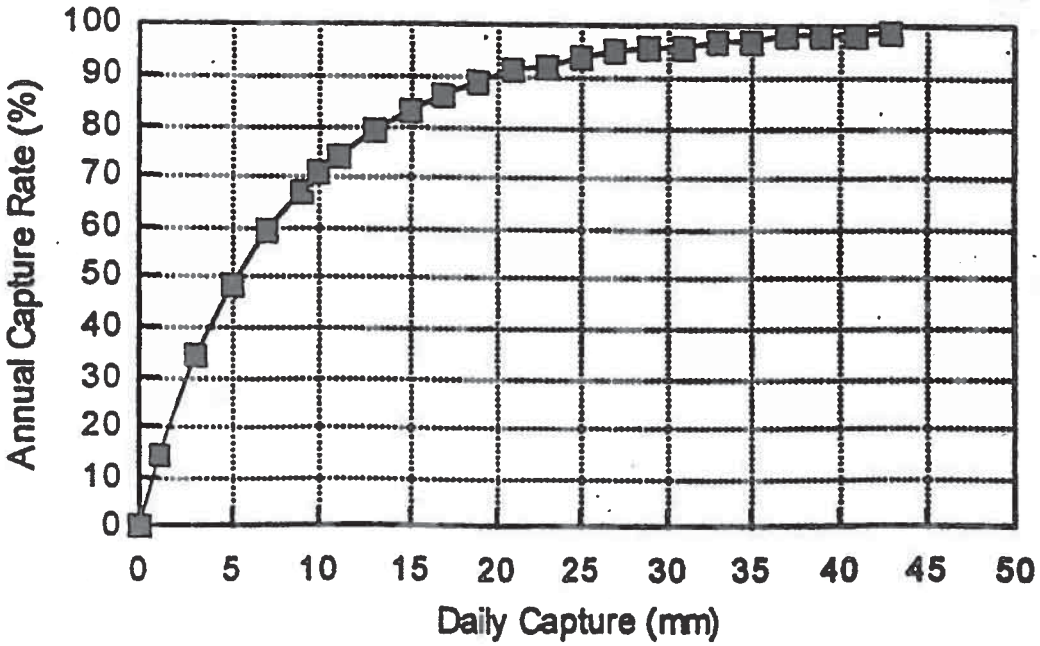


Figure C.2 Annual Capture Rate for Daily Capture Amounts



Source: MOE 1994 "Stormwater Management Practices Planning and Design Manual"

Table 3.1: Hydrologic Cycle Component Values

	Water Holding Capacity mm	Hydrologic Soil Group	Precipitation mm	Evapo-transpiration mm	Runoff mm	Infiltration* mm
Urban Lawns/Shallow Rooted Crops (spinach, beans, beets, carrots)						
Fine Sand	50	A	940	515	149	276
Fine Sandy Loam	75	B	940	525	187	228
Silt Loam	125	C	940	536	222	182
Clay Loam	100	CD	940	531	245	164
Clay	75	D	940	525	270	145
Moderately Rooted Crops (corn and cereal grains)						
Fine Sand	75	A	940	525	125	291
Fine Sandy Loam	150	B	940	539	160	241
Silt Loam	200	C	940	543	199	199
Clay Loam	200	CD	940	543	218	179
Clay	150	D	940	539	241	160
Pasture and Shrubs						
Fine Sand	100	A	940	531	102	307
Fine Sandy Loam	150	B	940	539	140	261
Silt Loam	250	C	940	546	177	217
Clay Loam	250	CD	940	546	197	197
Clay	200	D	940	543	218	179
Mature Forests						
Fine Sand	250	A	940	546	79	315
Fine Sandy Loam	300	B	940	548	118	274
Silt Loam	400	C	940	550	156	234
Clay Loam	400	CD	940	550	176	215
Clay	350	D	940	549	196	196

Notes: Hydrologic Soil Group A represents soils with low runoff potential and Soil Group D represents soils with high runoff potential. The evapotranspiration values are for mature vegetation. Streamflow is composed of baseflow and runoff.

* *This is the total infiltration of which some discharges back to the stream as base flow. The infiltration factor is determined by summing a factor for topography, soils and cover.*

Topography	Flat Land, average slope < 0.6 m/km	0.3
	Rolling Land, average slope 2.8 m to 3.8 m/km	0.2
	Hilly Land, average slope 28 m to 47 m/km	0.1
Soils	Tight impervious clay	0.1
	Medium combinations of clay and loam	0.2
	Open Sandy loam	0.4
Cover	Cultivated Land	0.1
	Woodland	0.2

Appendix D

Sewer Design Sheets

PEARSON ENGINEERING

CITY OF Orillia

03. Mar 23 STORM SEWER DESIGN - ORILLIA 2 YEAR STORM FILE No. 12012.09

CALC: PCO/IR CHECK:

MWD STONE RIDGE SUBDIVISION

STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL				Q	V
										I	Q	S	DIA	FULL	FULL
	FROM	TO	(m)	C	A	CA	CA	TO	IN	(mm/hr)	(cms)	(%)	(mm)	(cms)	(m/s)
	FLOWS TO PROPOSED SWM														
BLK 547 EXT.	DICB1	122	19.6	0.40	0.37	0.15	0.15	10.00	0.33	73.60	0.03	0.50	300.00	0.07	0.98
Orion Blvd	122	1	61.1	0.45	0.36	0.16	0.31	10.33	1.04	71.91	0.06	0.50	300.00	0.07	0.98
Orion Blvd	blk547	1	49.5	0.65	3.11	2.02	2.02	10.00	0.41	73.60	0.41	1.00	525.00	0.45	2.01
Orion Blvd	1	2	79.1	0.45	0.43	0.19	2.53	11.38	0.79	67.19	0.47	0.50	675.00	0.62	1.68
Orion Blvd	2	3	41.1	0.45	0.28	0.13	2.65	12.16	0.41	64.08	0.47	0.50	675.00	0.62	1.68
Orion Blvd	3	4	80.7	0.45	1.09	0.49	3.14	12.57	0.80	62.60	0.55	0.50	675.00	0.62	1.68
Orion Blvd	4	5	88.2	0.45	0.71	0.32	3.46	13.37	0.88	59.92	0.58	0.50	675.00	0.62	1.68
Orion Blvd	5	6	51.0	0.00	0.00	0.00	3.46	14.25	0.50	57.29	0.55	0.51	675.00	0.63	1.70
Orion Blvd	6	7	71.1	0.45	0.62	0.28	3.74	14.75	0.71	55.91	0.58	0.50	675.00	0.62	1.68
Orion Blvd	7	8	77.2	0.45	0.79	0.36	4.10	15.45	0.81	54.09	0.62	0.39	750.00	0.73	1.59
Orion Blvd	8	9	104.5	0.45	0.70	0.32	4.41	16.26	1.17	52.17	0.64	0.34	750.00	0.68	1.49
Block 461 (North)	Stub	119	9.2	0.85	2.92	2.48	2.48	11.50	0.07	66.67	0.46	1.00	600.00	0.64	2.20
Atlantis Drive	120	119	76.0	0.45	0.41	0.18	0.18	10.00	1.09	73.60	0.04	0.71	300.00	0.09	1.17
Atlantis Drive	119	14	61.9	0.45	0.56	0.25	2.73	11.57	0.64	66.38	0.50	0.46	675.00	0.59	1.61
Atlantis Drive	14	15	66.7	0.00	0.00	0.00	2.73	12.21	0.66	63.90	0.49	0.51	675.00	0.63	1.70
Atlantis Drive	15	16	82.5	0.45	0.76	0.34	3.08	12.87	0.86	61.58	0.53	0.45	675.00	0.59	1.59
Atlantis Drive	16	17	30.0	0.00	0.00	0.00	3.08	13.73	0.30	58.81	0.50	0.50	675.00	0.62	1.68
Atlantis Drive	17	18	76.4	0.45	0.68	0.31	3.38	14.03	0.67	57.92	0.54	0.64	675.00	0.70	1.90
Block 461 (South)	Stub	18	10.5	0.85	3.81	3.24	3.24	11.50	0.07	66.67	0.60	0.97	675.00	0.86	2.34
							.								
Atlantis Drive	18	9	120.0	0.45	1.42	0.64	7.26	14.70	0.64	56.04	1.13	1.74	675.00	1.16	3.13
Orion Blvd	9	10	100.8	0.45	0.21	0.09	11.76	17.43	0.54	49.66	1.62	1.30	825.00	1.71	3.09
Orion Blvd	10	11	94.0	0.45	0.58	0.26	12.03	17.98	0.52	48.59	1.62	1.23	825.00	1.66	3.01
Orion Blvd	11	118	75.9	0.45	0.62	0.28	12.30	18.50	0.28	47.62	1.63	2.83	825.00	2.52	4.57
Orion Blvd	118	12	18.1	0.45	0.44	0.20	12.50	18.77	0.06	47.12	1.64	3.20	825.00	2.68	4.86
Monarch Drive	12	19	94.0	0.45	0.84	0.38	12.88	18.84	0.41	47.01	1.68	2.00	825.00	2.12	3.84
Sierra (Area 203)	-	25	79.3	0.50	7.65	3.83	2.95	12.00	0.72	64.69	0.53	0.60	675.00	0.68	1.84
STM Easement	25	114	70.3	0.00	0.00	0.00	2.95	12.72	0.22	62.08	0.51	4.90	675.00	1.94	5.26
STM Easement	114	115	69.1	0.00	0.00	0.00	2.95	12.94	0.22	61.32	0.50	5.00	675.00	1.96	5.31
STM Easement	115	116	11.4	0.00	0.00	0.00	2.95	13.16	0.04	60.60	0.50	5.00	675.00	1.96	5.31
Sierra Drive	26	27	120.0	0.45	1.70	0.77	0.77	10.00	1.39	73.60	0.16	0.80	375.00	0.16	1.44
Sierra Drive	27	28	108.0	0.45	0.80	0.36	1.13	11.39	1.11	67.11	0.21	0.80	450.00	0.27	1.62
Sierra Drive	28	19	108.0	0.45	1.56	0.70	1.83	12.50	1.00	62.83	0.32	0.80	525.00	0.40	1.80
Monarch Drive	19	20	89.0	0.00	0.00	0.00	14.71	19.24	0.34	46.30	1.89	2.61	825.00	2.42	4.39
Monarch Drive	20	21	14.1	0.45	0.34	0.15	14.86	19.58	0.04	45.74	1.89	3.83	825.00	2.93	5.31
Monarch Drive	21	22	100.1	0.45	0.75	0.34	15.20	19.63	0.36	45.66	1.93	2.87	825.00	2.54	4.60
Monarch Drive	22	23	80.8	0.45	0.62	0.28	15.48	19.99	0.52	45.07	1.94	0.67	1050.00	2.33	2.61
Monarch Drive	116	24	24.5	0.00	0.00	0.00	2.95	13.19	0.27	60.49	0.50	0.40	675.00	0.55	1.50
Monarch Drive	24	23	85.1	0.45	0.68	0.31	3.26	13.47	0.94	59.62	0.54	0.40	675.00	0.55	1.50
Easement/Blk 696	23	25	41.5	0.45	1.45	0.65	19.39	20.51	0.14	44.27	2.38	2.40	1050.00	4.41	4.94
	25	HW	11.0	0.00	0.00	0.00	19.39	20.65	0.03	44.06	2.37	4.17	1050.00	5.82	6.51
Schl BLK (Area 209)	-	201	11.0	0.60	4.58	2.75	2.75	10.00	0.10	73.60	0.56	0.60	600.00	0.68	1.84
Area 201	-	POND	47.3	0.45	31.50	14.18	16.92	10.10	0.27	73.09	3.44	0.60	1350.00	4.31	2.92
Area 208	-	POND	40.8	0.41	9.02	3.70	3.70	10.00	0.34	73.60	0.76	0.60	750.00	0.90	1.97
	FLOWS TO HUNTER VALLEY														

PEARSON ENGINEERING

CITY OF Orillia

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CALC: PCO/IR CHECK:

MWD STONE RIDGE SUBDIVISION

STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL I	Q	S	DIA	Q FULL	V FULL
	FROM	TO	(m)	C	A	CA	CA	TO	IN	(mm/hr)	(cms)	(%)	(mm)	(cms)	(m/s)
Annalyse Drive	26.1	27.1	75.0	0.45	1.27	0.57	0.57	10.00	0.74	73.60	0.12	1.50	300.00	0.12	1.69
Stone Ridge (Area 202)	-	27.1	40.7	0.45	2.18	0.98	0.98	10.25	0.39	72.33	0.20	0.90	450.00	0.28	1.72
Stone Ridge	27.1	28.1	98.5	0.45	0.76	0.34	1.89	10.74	0.86	69.99	0.37	0.90	525.00	0.43	1.91
Stone Ridge	28.1	29	98.5	0.45	0.79	0.36	2.25	11.60	0.78	66.26	0.41	1.10	525.00	0.47	2.11
Stone Ridge	29	30	24.0	0.45	0.64	0.29	2.54	12.38	0.13	63.28	0.45	2.20	525.00	0.67	2.98
Isabella Drive	31	32	53.6	0.59	1.27	0.75	0.75	10.00	0.56	73.60	0.15	1.00	375.00	0.18	1.60
Isabella Drive	32	33	67.1	0.00	0.00	0.00	0.75	10.56	0.87	70.83	0.15	0.50	450.00	0.21	1.28
Isabella Drive	33	34	10.0	0.71	0.39	0.28	1.03	11.43	0.13	66.96	0.19	0.50	450.00	0.21	1.28
Isabella Drive	34	35	84.9	0.59	0.60	0.35	1.38	11.56	1.11	66.43	0.25	0.50	450.00	0.21	1.28
PARK BLK 722	DICB	36	15.2	0.45	0.95	0.43	0.43	10.00	0.13	73.60	0.09	2.00	300.00	0.14	1.96
Orion Blvd	56	36	72.1	0.45	0.42	0.19	0.19	10.00	0.56	73.60	0.04	2.45	300.00	0.16	2.16
Orion Blvd	36	35	82.2	0.45	0.46	0.21	0.82	10.56	0.47	70.84	0.16	4.50	300.00	0.21	2.93
Annalyse Drive	37	35	100.0	0.45	0.82	0.37	0.37	10.00	0.73	73.60	0.08	2.70	300.00	0.17	2.27
Orion Blvd	35	30	93.0	0.45	0.54	0.24	2.82	12.67	0.54	62.27	0.49	2.50	450.00	0.47	2.87
StoneRidge	30	38	69.8	0.45	0.48	0.22	5.57	13.21	0.31	60.45	0.94	3.00	600.00	1.11	3.80
StoneRidge	38	39	113.0	0.47	1.30	0.61	6.18	13.51	0.63	59.48	1.02	1.60	750.00	1.11	3.00

PEARSON ENGINEERING

CITY OF Orillia

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STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL			DIA	Q FULL	V FULL
	FROM	TO	(m)	C	A	CA	CA	TO	IN	I (mm/hr)	Q (cms)	S (%)	(mm)	(cms)	(m/s)
Diana Drive	42	43	90.0	0.60	0.87	0.52	0.52	10.00	1.03	73.60	0.11	1.10	300.00	0.11	1.45
Trailside Rd (Area 702A)	-	43	11.5	0.44	11.00	4.84	4.84	13.20	0.08	60.47	0.81	1.00	675.00	0.88	2.37
Diana Drive	43	44	51.0	0.55	0.64	0.35	5.71	13.28	0.33	60.21	0.96	1.00	750.00	1.16	2.55
Diana Drive	44	45	8.5	0.00	0.00	0.00	5.71	13.61	0.06	59.16	0.94	1.00	750.00	1.16	2.55
Diana Drive	45	46	71.0	0.00	0.00	0.00	5.71	13.67	0.46	58.99	0.94	1.00	750.00	1.16	2.55
Diana Drive	46	47.1	8.5	0.55	0.41	0.23	5.94	14.13	0.06	57.61	0.95	1.00	750.00	1.16	2.55
Diana Drive	47.1	48.1	80.9	0.45	0.50	0.23	6.16	14.19	0.53	57.45	0.98	1.00	750.00	1.16	2.55
Diana Drive	48.1	49	77.4	0.45	0.77	0.35	6.51	14.72	0.57	55.98	1.01	0.70	825.00	1.25	2.27
Diana Drive	49	50	11.0	0.00	0.00	0.00	6.51	15.29	0.08	54.50	0.99	0.64	825.00	1.20	2.17
Diana Drive	50	51	114.2	0.45	1.20	0.54	7.05	15.37	0.94	54.29	1.06	0.50	900.00	1.34	2.03
Diana Drive	51	52	27.3	0.45	0.81	0.36	7.42	16.31	0.13	52.06	1.07	1.55	900.00	2.35	3.58
Easement/Blk 843	53	52	49.0	0.70	0.49	0.34	0.34	10.00	0.84	73.60	0.07	0.50	300.00	0.07	0.98
Isabella Drive	52	55	92.8	0.50	0.70	0.35	8.11	16.43	0.69	51.78	1.17	0.60	900.00	1.46	2.23
Isabella Drive	55	56	26.0	0.00	0.00	0.00	8.11	17.13	0.19	50.28	1.13	0.60	900.00	1.46	2.23
Diana Drive	57	58	79.6	0.45	0.74	0.33	0.33	10.00	0.61	73.60	0.07	2.50	300.00	0.16	2.19
Diana Drive	58	59	85.0	0.45	0.37	0.17	0.50	10.61	0.65	70.60	0.10	2.50	300.00	0.16	2.19
Diana Drive	59	EX.56	88.0	0.45	0.45	0.20	0.70	11.25	0.77	67.70	0.13	1.92	300.00	0.14	1.92
Isabella Drive	EX.56	60	95.3	0.60	0.78	0.47	9.28	17.32	0.64	49.88	1.29	0.75	900.00	1.64	2.49
Isabella Drive	60	61	60.0	0.60	0.78	0.47	9.75	17.96	0.30	48.62	1.32	1.33	900.00	2.18	3.32
Isabella (Area 204)	CB	61	66.0	0.20	8.39	1.68	1.68	30.00	0.56	33.81	0.16	1.50	375.00	0.22	1.97
Woodlot/Blk 850				0.20	0.92	0.18	0.18								
Isabella Drive	61	39	60.3	0.55	0.58	0.32	11.93	18.26	0.38	48.05	1.59	0.70	1050.00	2.38	2.67
Isabella Drive	40	41	100.8	0.63	1.21	0.76	0.76	10.00	0.73	73.60	0.16	2.80	300.00	0.17	2.31
Isabella Drive	41	39	115.9	0.64	1.06	0.68	1.44	10.73	0.81	70.04	0.28	2.17	375.00	0.27	2.38
Stone Ridge	39	79	90.1	0.45	0.17	0.08	19.63	18.64	0.53	47.36	2.58	0.65	1200.00	3.28	2.81
Stone Ridge	79	100	85.0	0.45	0.35	0.16	19.78	19.17	0.50	46.42	2.55	0.65	1200.00	3.28	2.81
Stone Ridge	100	101	95.0	0.45	1.00	0.45	20.23	19.68	0.33	45.58	2.56	1.90	1200.00	5.61	4.80
Stone Ridge	101	102	85.6	0.45	0.45	0.70	20.93	20.01	0.64	45.05	2.62	0.35	1350.00	3.29	2.23
													--- 965x1525 HE pipe		
INDUSTRIAL AREA															
Diana Drive	CB1	MH7	22.3	0.60	0.09	0.05	0.05	10.00	0.28	73.60	0.01	0.90	300.00	0.09	1.31
Diana Drive	MH7	MH6	26.8	0.60	0.04	0.02	0.08	10.28	0.14	72.16	0.02	5.50	300.00	0.23	3.21
Diana Drive	MH6	MH5	60.0	0.68	0.36	0.24	0.32	10.42	0.22	71.48	0.06	6.20	450.00	0.71	4.45
Diana Drive	MH5	MH4	66.9	0.69	2.82	1.95	2.27	10.65	0.25	70.41	0.44	6.10	450.00	0.71	4.44
Diana Drive	MH4	MH3	60.7	0.68	0.75	0.51	2.78	10.90	0.21	69.25	0.53	5.70	525.00	1.03	4.74
Diana Drive	MH3	MH2	52.2	0.70	2.14	1.50	4.28	11.11	0.22	68.31	0.81	2.80	675.00	1.40	3.90
Diana Drive	MH2	MH1	63.4	0.60	0.17	0.10	4.38	11.34	0.41	67.35	0.82	0.90	825.00	1.38	2.59
Diana Drive	MH1	91	25.6	0.70	3.38	2.37	6.74	11.74	0.15	65.69	1.23	1.00	900.00	1.81	2.85
West Ridge	91	92	73.2	0.65	0.23	0.15	6.89	11.89	0.61	65.10	1.25	0.40	1050.00	1.80	2.02
West Ridge	92	93	88.3	0.65	0.85	0.55	7.45	12.50	0.73	62.85	1.30	0.40	1050.00	1.80	2.02
West Ridge	93	94	110.0	0.65	1.51	0.98	8.43	13.23	0.50	60.38	1.41	1.32	1050.00	3.27	3.66
West Ridge	94	95	74.0	0.65	2.13	1.38	9.81	13.73	0.27	58.81	1.60	2.10	1050.00	4.13	4.62
West Ridge	95	96	89.2	0.65	0.85	0.55	10.37	14.00	0.35	58.02	1.67	1.81	1050.00	3.83	4.29
Woodlot/Blk 850				0.20	0.53	0.11									
Hi-Density Blk 851	stub	96	22.0	0.75	2.86	2.15	2.25	12.00	0.14	64.69	0.40	2.00	450.00	0.42	2.56
Harvie Settlement Rd	DICB	96	23.6	0.45	1.49	0.67	0.67	10.00	0.17	133.58	0.25	2.00	375.00	0.26	2.27
										25 year storm					
West Ridge	96	97	59.2	0.85	0.32	0.27	12.89	14.34	0.37	57.02	2.29	0.70	1050.00	2.38	2.67
Woodlot/Blk 850				0.20	0.34	0.07									

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STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL I	TOTAL Q	TOTAL S	DIA	Q FULL	V FULL
	FROM	TO	(m)	C	A	CA	CA	TO	IN	(mm/hr)	(cms)	(%)	(mm)	(cms)	(m/s)
Service Rd -Blk210	98	99	78.0	0.45	0.13	0.06	0.13	10.50	0.59	71.10	0.02	2.50	300.00	0.16	2.19
Service Rd -Blk210	99	97	76.0	0.45	0.58	0.26	0.39	11.09	1.12	68.39	0.07	0.50	375.00	0.13	1.13
West Ridge	97	102	62.5	0.85	0.52	0.44	13.72	14.71	0.54	56.00	2.13	0.31	1200.00	2.27	1.94
													--- 1090x1725 HE pipe		
Hunter Valley	102	103	119.2	0.50	0.27	0.14	34.79	20.65	0.84	44.05	4.26	0.34	1500.00	4.30	2.36
Hunter Valley	103	HWALL	83.3	0.50	5.37	2.69	37.47	21.49	0.55	42.82	4.46	0.34	1650.00	5.55	2.51
													---1220x1930 HE pipe		

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STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL I	TOTAL Q	TOTAL S	DIA	Q FULL	V FULL
	FROM	TO	(m)	C	A	CA	CA	TO	IN	(mm/hr)	(cms)	(%)	(mm)	(cms)	(m/s)
FLOWS TO BOX CULVERT ON WEST RIDGE															
Monarch	62	63	87.0	0.45	1.59	0.72	0.72	10.00	0.98	73.60	0.15	0.85	375.00	0.17	1.48
Monarch	63	64	96.0	0.45	0.77	0.35	1.06	10.98	0.84	68.89	0.20	1.40	375.00	0.22	1.90
Monarch	64	65	96.0	0.45	0.83	0.37	1.44	11.82	0.64	65.38	0.26	1.90	450.00	0.41	2.50
Monarch	65	66	96.8	0.45	0.40	0.18	1.62	12.46	0.89	62.98	0.28	1.00	450.00	0.30	1.81
Monarch	67	68	72.3	0.45	0.65	0.29	0.29	10.00	0.65	73.60	0.06	1.80	300.00	0.14	1.86
Monarch	68	69	25.2	0.00	0.00	0.00	0.29	10.65	0.26	70.40	0.06	1.40	300.00	0.12	1.64
Monarch	69	66	32.2	0.00	0.00	0.00	0.29	10.91	0.55	69.22	0.06	0.50	300.00	0.07	0.98
BLOCK 377	DICB1	70	7.9	0.25	3.73	0.93	0.93	27.65	0.12	35.82	0.09	0.50	375.00	0.13	1.13
	70	66	10.1	0.45	0.17	0.08	1.01	27.77	0.04	35.72	0.10	5.46	375.00	0.43	3.75
*The time of concentration for Woodlot Block 377 was calculated as 27.65 minutes. The storm sewer for the development up to DCBMH66 has a time of															
Walkway Blk 211	66	75	88.0	0.45	0.77	0.35	2.25	13.35	0.32	59.98	0.38	6.25	450.00	0.74	4.53
Emperor Drive	71	72	55.5	0.45	0.63	0.28	0.28	10.00	0.95	73.60	0.06	0.50	300.00	0.07	0.98
Emperor Drive	72	73	96.5	0.45	1.33	0.60	0.88	10.95	1.15	69.04	0.17	0.60	450.00	0.23	1.40
Emperor Drive	73	74	96.5	0.45	0.77	0.35	1.23	12.09	1.15	64.34	0.22	0.60	450.00	0.23	1.40
Emperor Drive	74	75	83.8	0.45	0.75	0.34	1.57	13.24	0.68	60.35	0.26	1.30	450.00	0.34	2.07
Emperor Drive	75	76	40.8	0.00	0.00	0.00	3.82	13.91	0.24	58.26	0.62	2.00	525.00	0.63	2.84
Emperor Drive	76	77	87.6	0.45	1.01	0.45	4.28	14.15	0.39	57.56	0.68	3.40	525.00	0.83	3.70
Emperor Drive	77	78	90.0	0.45	1.42	0.64	4.91	14.55	0.46	56.45	0.77	2.20	600.00	0.95	3.26
Emperor Drive	79	78	94.1	0.45	1.06	0.48	0.48	10.00	1.55	73.60	0.10	0.40	375.00	0.12	1.01
Pearl Drive	78	83	80.6	0.45	0.00	0.00	5.39	15.01	0.50	55.22	0.83	1.30	675.00	1.00	2.71
Pearl Drive	83	84	9.0	0.45	0.53	0.24	5.63	15.50	0.06	53.96	0.84	1.30	675.00	1.00	2.71
Pearl Drive	84	82	46.6	0.45	0.18	0.08	5.71	15.56	0.30	53.82	0.85	1.20	675.00	0.96	2.60
Pearl Drive	80	81	70.0	0.45	0.75	0.34	0.34	10.00	0.60	73.60	0.07	2.00	300.00	0.14	1.96
Pearl Drive	81	82	112.9	0.45	1.92	0.86	1.20	10.60	1.14	70.65	0.24	0.83	450.00	0.27	1.65
BLOCK 209	82	85	79.5	0.70	0.35	0.25	7.16	15.86	0.76	53.10	1.06	0.30	1050.00	1.56	1.75
BLOCK 209	85	86	65.5	0.70	1.02	0.71	7.87	16.62	0.63	51.37	1.12	0.30	1050.00	1.56	1.75
BLOCK 209	86	87	18.3	0.00	0.00	0.00	7.87	17.24	0.17	50.05	1.09	0.30	1050.00	1.56	1.75
BLOCK 209	EXT	87	10.0	0.60	1.32	0.79	0.79	10.00	0.15	73.60	0.16	0.40	450.00	0.19	1.15
BLOCK 209	87	88	35.4	0.45	0.27	0.12	8.78	17.42	0.34	49.69	1.21	0.30	1050.00	1.56	1.75
BLOCK 209	EXT	88	5.0	0.70	2.59	1.81	1.81	11.00	0.06	68.80	0.35	0.40	600.00	0.41	1.39
West Ridge	116	119	64.5	0.90	0.24	0.22	0.22	10.00	1.10	73.60	0.04	0.50	300.00	0.07	0.98
	119	OUT	8.5	0.90	0.52	0.47	0.68	11.10	0.07	68.36	0.13	1.50	375.00	0.22	1.97
West Ridge	117	118	76.7	0.90	0.27	0.24	0.93	10.00	1.00	73.60	0.19	0.50	450.00	0.21	1.28
	118	OUT	19.5	0.00	0.00	0.00	0.93	11.00	0.15	68.81	0.18	1.50	450.00	0.36	2.22
BOX CULVERT	88	OUT	35.0	0.00	0.00	0.00	11.74	17.75	0.31	49.02	1.60	0.30	1200.00	2.23	1.91
													---900x1800 Conc. Box		
Monarch (north)				0.45	1.26	0.57	0.57								
Walkway Blk 344	107	EX 50	68.8	0.45	1.26	0.57	0.57	10.00	0.48	73.60	0.12	3.00	300.00	0.17	2.40
Exist Monarch	EX 50	Ex 51	28.9	0.45	0.07	0.03	0.60	10.48	0.10	71.21	0.12	7.54	450.00	0.83	5.03
Emperor				0.45	0.88	0.40	0.40								

PEARSON ENGINEERING

CITY OF Orillia

03. Mar 23 STORM SEWER DESIGN - ORILLIA 2 YEAR STORM FILE No. 12012.09

CALC: PCO/IR CHECK:

MWD STONE RIDGE SUBDIVISION

STREET	MANHOLE		LENGTH	INCREMENT			TOTAL	FLOW TIME (min.)		TOTAL				Q	V
	FROM	TO	(m)	C	A	CA	CA	TO	IN	I (mm/hr)	Q (cms)	S (%)	DIA (mm)	FULL (cms)	FULL (m/s)
Emperor	EX 60	EX 61	43.0	0.47	0.32	0.15	0.55	10.00	0.21	73.60	0.11	6.00	300.00	0.25	3.39
Pearl Drive	104	105	24.0	0.45	0.56	0.25	0.25	10.00	0.12	73.60	0.05	6.00	300.00	0.25	3.39
Pearl Drive	105	106	49.7	0.45	0.77	0.35	0.60	10.12	0.47	72.99	0.12	1.20	375.00	0.20	1.76
Pearl Drive	106	EX 78	16.2	0.00	0.00	0.00	0.60	10.59	0.15	70.68	0.12	1.29	375.00	0.21	1.82
Vanessa	EXT	Ex 75		0.47	16.16	7.60	7.60	14.03	0.00	57.91	1.22				
Vanessa	Ex 75	Ex 77	65.0	0.47	0.99	0.47	8.06	14.03	0.25	57.91	1.30	2.80	750.00	1.94	4.26
Vanessa	Ex 77	Ex 78	38.0	0.47	0.16	0.08	8.14	14.28	0.17	57.18	1.29	2.10	750.00	1.68	3.69
Vanessa	Ex 78	Ex 79	40.0	0.47	0.19	0.09	8.82	14.46	0.30	56.70	1.39	0.50	1050.00	2.01	2.25
													--- 865x1345 HE pipe		
Atlantis Drive	108	109	34.3	0.45	0.54	0.24	0.24	10.00	0.22	73.60	0.05	3.60	300.00	0.19	2.62
Atlantis Drive	109	110	15.5	0.00	0.00	0.00	0.24	10.22	26%	72.49	0.05	0.50	300.00	0.07	0.98
PARK - Blk 460	DI	110	13.5	0.20	1.34	0.27	0.27	10.00	0.12	73.60	0.05	1.90	300.00	0.14	1.91
Atlantis Drive	110	111	69.0	0.45	0.28	0.13	0.64	10.48	1.01	71.19	0.13	0.50	375.00	0.13	1.13
Atlantis Drive	112	113	36.7	0.47	0.35	0.16	0.16	10.00	0.63	73.60	0.03	0.50	300.00	0.07	0.98
Atlantis Drive	113	114	52.3	0.00	0.00	0.00	0.16	10.63	0.89	70.51	0.03	0.50	300.00	0.07	0.98
Atlantis Drive	114	111	66.8	0.45	0.85	0.38	0.55	11.52	0.98	66.60	0.10	0.50	375.00	0.13	1.13
Cleopatra	111	115	40.7	0.00	0.00	0.00	1.18	12.50	0.37	62.85	0.21	1.00	450.00	0.30	1.81
Cleopatra	115	EX 31	22.9	0.00	0.00	0.00	1.18	12.87	0.21	61.55	0.20	1.00	450.00	0.30	1.81
Cleopatra	EX 31	EX 32	38.0	0.45	0.42	0.19	1.37	13.08	0.32	60.85	0.23	1.20	450.00	0.33	1.99

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
DATE: 2023-03-03

STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
School Blk 547		BLK 547	1A			2.72	ha.			Qtot = (0.27+0.04) x Area			0.84			2.11	200.0	1.00%	34.22	1.06
ORION BLVD	1	1A	2A	8	3.0	24	24	54.9	54.9	4.00	0.08	0.01	0.94	0.33	0.03	2.47	200.0	1.00%	34.22	1.06
ORION BLVD	2	2A	3A	10	3.0	30	54	82.3	137.2	4.00	0.19	0.03	1.06	0.75	0.06	2.92	200.0	0.55%	25.38	0.78
ORION BLVD	3	3A	4A	7	3.0	21	75	42.6	179.8	4.00	0.26	0.03	1.14	1.04	0.08	3.23	200.0	0.50%	24.20	0.75
ORION BLVD	4	4A	5A	13	3.0	39	114	84.5	264.3	4.00	0.40	0.05	1.29	1.58	0.12	3.82	200.0	0.50%	24.20	0.75
ORION BLVD	5	5A	6A	15	3.0	45	159	84.5	348.8	4.00	0.55	0.07	1.46	2.21	0.16	4.48	200.0	0.50%	24.20	0.75
ORION BLVD	6	6A	7A	7	3.0	21	180	49.5	398.3	4.00	0.63	0.07	1.54	2.50	0.19	4.80	200.0	0.50%	24.20	0.75
ORION BLVD	7	7A	8A	5	3.0	15	195	73.3	471.6	4.00	0.68	0.09	1.61	2.71	0.22	5.04	200.0	0.50%	24.20	0.75
ORION BLVD	8	8A	9A	10	3.0	30	225	77.2	548.8	4.00	0.78	0.10	1.73	3.13	0.26	5.49	200.0	0.47%	23.46	0.72
ORION BLVD	9	9A	10A	12	3.0	36	261	104.5	653.3	4.00	0.91	0.12	1.87	3.63	0.31	6.04	200.0	0.48%	23.71	0.73
ATLANTIS DR	10	11A	12A	10	3.0	30	30	67.7	67.7	4.00	0.10	0.01	0.12	0.42	0.03	0.45	200.0	0.96%	33.53	1.03
ATLANTIS DR	42	12A	130A	4	3.0	12	42	34.3	102.0	4.00	0.15	0.02	0.17	0.58	0.05	0.63	200.0	0.38%	21.10	0.65
ATLANTIS DR	11	130A	13A	14	3.0	42	84	58.7	160.7	4.00	0.29	0.03	0.32	1.17	0.08	1.24	200.0	0.46%	23.21	0.72
ATLANTIS DR	12	13A	14A	12	3.0	36	78	69.4	230.1	4.00	0.27	0.04	0.31	1.08	0.11	1.19	200.0	0.50%	24.20	0.75
ATLANTIS DR	13	14A	15A	14	3.0	42	120	80.6	310.7	4.00	0.42	0.06	0.48	1.67	0.15	1.81	200.0	0.51%	24.44	0.75
ATLANTIS DR	14	15A	16A	3	3.0	9	129	31.4	342.1	4.00	0.45	0.06	0.51	1.79	0.16	1.95	200.0	0.51%	24.44	0.75
ATLANTIS DR	15	16A	17A	11	3.0	33	162	73.7	415.8	4.00	0.56	0.08	0.64	2.25	0.20	2.45	200.0	0.60%	26.51	0.82
Hi-Density - BLK 461	115	STUB	17A	635	3.0	1905	2067	11.5	228.0	3.57	7.18	0.04	7.22	25.7	0.11	25.76	250.0	0.50%	43.88	0.87
ATLANTIS DR	16	17A	10A	16	3.0	48	2277	120.0	763.8	3.54	7.91	0.14	8.05	28.0	0.36	28.36	250.0	1.70%	80.91	1.60

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
DATE: 2023-03-03

STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
ORION BLVD	17	10A	18A	9	3.0	27	2565	94.8	1511.9	3.50	8.91	0.28	9.19	31.2	0.71	33.98	250.0	1.53%	76.75	1.51
ORION BLVD	18	18A	19A	14	3.0	42	2607	94.0	1605.9	3.49	9.05	0.30	9.35	31.6	0.75	34.49	250.0	1.33%	71.56	1.41
ORION BLVD	19	19A	20A	8	3.0	24	2631	94.0	1699.9	3.49	9.14	0.32	9.45	31.9	0.80	34.79	250.0	2.83%	104.39	2.06
ORION BLVD	20	20A	21A	6	3.0	18	2649	80.0	1779.9	3.49	9.20	0.33	9.53	32.1	0.84	35.02	250.0	0.60%	48.07	0.95
ORION BLVD	21	21A	22A	8	3.0	24	2673	73.9	1853.8	3.48	9.28	0.35	9.63	32.3	0.87	35.32	250.0	2.45%	97.13	1.92
ORION BLVD	22	22A	23A	10	3.0	30	2703	89.2	1943.0	3.48	9.39	0.37	9.75	32.7	0.91	35.69	250.0	3.80%	120.96	2.39
MONARCH DR	42	24A	101A	10	3.0	30	30	84.0	84.0	4.00	0.10	0.02	0.12	0.42	0.04	0.46	200.0	2.40%	53.02	1.63
MONARCH DR	101	101A	EX50	5	3.0	15	45	44.8	128.8	4.00	0.16	0.02	0.18	0.63	0.06	0.69	200.0	3.47%	63.75	1.97
MONARCH DR	23	24A	25A	11	3.0	33	33	78.7	78.7	4.00	0.11	0.01	0.13	0.46	0.04	0.50	200.0	1.30%	39.02	1.20
MONARCH DR	24	25A	26A	14	3.0	42	75	97.2	175.9	4.00	0.26	0.03	0.29	1.04	0.08	1.12	200.0	0.85%	31.55	0.97
MONARCH DR	25	26A	27A	15	3.0	45	120	96.0	271.9	4.00	0.42	0.05	0.47	1.67	0.13	1.79	200.0	1.40%	40.49	1.25
MONARCH DR	26	27A	28A	11	3.0	33	153	96.0	367.9	4.00	0.53	0.07	0.60	2.13	0.17	2.30	200.0	1.90%	47.17	1.45
MONARCH DR	27	28A	29A	8	3.0	24	177	94.8	462.7	4.00	0.61	0.09	0.70	2.46	0.22	2.68	200.0	1.00%	34.22	1.06
MONARCH DR	31	20A	32A	11	3.0	33	33	92.0	92.0	4.00	0.11	0.02	0.13	0.46	0.04	0.50	200.0	1.50%	41.92	1.29
MONARCH DR	30	32A	31A	10	3.0	30	63	66.3	158.3	4.00	0.22	0.03	0.25	0.88	0.07	0.95	200.0	1.80%	45.92	1.42
MONARCH DR	29	31A	30A	4	3.0	12	75	25.0	183.3	4.00	0.26	0.03	0.29	1.04	0.09	1.13	200.0	1.40%	40.49	1.25
MONARCH DR	28	30A	29A	4	3.0	12	87	30.1	213.4	4.00	0.30	0.04	0.34	1.21	0.10	1.31	200.0	1.00%	34.22	1.06
ISABELLA	32	33A	116A	2	3.0	6	6	12.8	12.8	4.00	0.02	0.00	0.02	0.08	0.01	0.09	200.0	1.50%	41.92	1.29
ISABELLA	33	33A	34A	15	3.0	45	51	60.4	60.4	4.00	0.18	0.01	0.19	0.71	0.03	0.74	200.0	1.00%	34.22	1.06
ISABELLA	34	34A	35A	16	3.0	48	99	71.4	131.8	4.00	0.34	0.02	0.37	1.38	0.06	1.44	200.0	0.50%	24.20	0.75
ISABELLA	35	35A	36A	4	3.0	12	111	12.5	144.3	4.00	0.39	0.03	0.41	1.54	0.07	1.61	200.0	0.50%	24.20	0.75
ISABELLA	36	36A	23A	4	3.0	12	123	83.2	227.5	4.00	0.43	0.04	0.47	1.71	0.11	1.82	200.0	0.50%	24.20	0.75
ANNALYSE	37	37A	23A	13	3.0	39	39	110.0	110.0	4.00	0.14	0.02	0.16	0.54	0.05	0.59	200.0	2.80%	57.27	1.77
ORION BLVD	38	23A	38A	5	3.0	15	2880	93.0	2373.5	3.46	10.00	0.45	10.45	34.57	1.12	37.80	250.0	2.60%	100.06	1.97

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
DATE: 2023-03-03

STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
MONARCH	43	127A	39A	4	3.0	12	12	16.6	16.6	4.00	0.04	0.00	0.04	0.17	0.01	0.17	200.0	0.73%	29.24	0.90
MONARCH	40	39A	40A	6	3.0	18	30	53.7	70.3	4.00	0.10	0.01	0.12	0.42	0.03	0.45	200.0	0.40%	21.64	0.67
MONARCH	41	40A	41A	9	3.0	27	57	86.5	156.8	4.00	0.20	0.03	0.23	0.79	0.07	0.87	200.0	0.50%	24.20	0.75
SIERRA (AREA 4)		-	43A	107	3.0	321	321	752.0	752.0	4.00	1.11	0.14	1.26	4.46	0.35	4.81	200.0	0.50%	24.20	0.75
SIERRA	44	43A	44A	104	3.0	312	633	841.0	1593.0	3.92	2.20	0.30	2.50	8.61	0.75	9.36	200.0	0.50%	24.20	0.75
SIERRA	45	44A	45A	8	3.0	24	657	78.7	1671.7	3.91	2.28	0.31	2.60	8.92	0.79	9.71	200.0	0.50%	24.20	0.75
SIERRA	46	45A	46A	14	3.0	42	699	110.0	1781.7	3.89	2.43	0.33	2.76	9.45	0.84	10.29	200.0	0.50%	24.20	0.75
SIERRA	47	46A	47A	18	3.0	54	753	110.0	1891.7	3.88	2.61	0.36	2.97	10.13	0.89	11.02	200.0	0.50%	24.20	0.75
SIERRA	48	47A	48A	16	3.0	48	801	108.0	1999.7	3.86	2.78	0.38	3.16	10.74	0.94	11.68	200.0	1.00%	34.22	1.06
MONARCH DR	49	49A	48A	5	3.0	15	15	67.3	67.3	4.00	0.05	0.01	0.06	0.21	0.03	0.24	200.0	1.98%	48.16	1.48
MONARCH DR	50	48A	42A	6	3.0	18	834	99.0	2166.0	3.85	2.90	0.41	3.30	11.15	1.02	12.17	200.0	2.79%	57.16	1.76
MONARCH DR	51	42A	49A	12	3.0	36	870	70.2	2236.2	3.84	3.02	0.42	3.44	11.59	1.05	12.65	200.0	2.98%	59.08	1.82
MONARCH DR	52	49A	41A	10	3.0	30	900	63.3	2299.5	3.83	3.13	0.43	3.56	11.97	1.08	13.05	200.0	3.07%	59.96	1.85
SAN TRNK EASEMENT		41A	108A		3.0	0	957	91.8	2548.1	3.81	3.32	0.48	3.80	12.67	1.20	13.87	200.0	0.40%	21.64	0.67
SAN TRNK EASEMENT		108A	109A																	
SAN TRNK EASEMENT		109A	110A		3.0	0	957	91.8	2639.9	3.81	3.32	0.50	3.82	12.67	1.24	13.91	200.0	0.40%	21.64	0.67
FUTURE SCHOOL	(Future School Peak Flow included in Area 1 below)					2.51	ha.			Qtot = (0.27+0.04) x Area			0.78			1.95				
TRAILSIDE RD (AREA 1)		-	111A	990	3.0	2970	2970	4,081.0	4,081.0	3.45	10.31	0.77	11.08	35.54	1.92	37.46	375.0	0.30%	100.21	1.37
		111A	110A		3.0	0	2970	40.8	4121.8	3.45	10.31	0.77	11.09	35.54	1.94	37.47	375.0	0.30%	100.21	1.37

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
DATE: 2023-03-03

STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
		110A	114A		3.0	0	3927	92.7	6854.4	3.34	13.64	1.29	14.92	45.55	3.22	48.77	375.0	0.30%	100.21	1.37
																		PL		
		114A	115A		3.0	0	3927	105.5	6959.9	3.34	13.64	1.31	26.80	45.55	3.27	50.76	375.0	0.30%	100.21	1.37
		115A	117A		3.0	0	3927	105.0	7064.9	3.34	13.64	1.33	15.74	45.55	3.32	50.81	375.0	0.30%	100.21	1.37
ANNALYSE	53	37A	51A	13	3.0	39	39	104.0	104.0	4.00	0.14	0.02	0.15	0.54	0.05	0.59	200.0	1.30%	39.02	1.20
ANNALYSE	55	51A	52A	2	3.0	6	6	9.9	113.9	4.00	0.02	0.02	0.04	0.08	0.05	0.14	200.0	2.30%	51.90	1.60
ANNALYSE	56	52A	53A	13	3.0	39	45	86.0	199.9	4.00	0.16	0.04	0.19	0.63	0.09	0.72	300.0	1.90%	139.09	1.91
FUTURE SCHOOL	(Future School Peak Flow included in Area 3 below)					2.06	ha.			Qtot = (0.27+0.04) x Area			0.64			1.60				
STONE RIDGE (AREA 3)		-	117A	90	3.0	270	270	113.0	113.0	4.00	0.94	0.02	1.60	3.75	0.05	5.40	200.0	0.30%	18.75	0.58
STONE RIDGE	58.1	117A	53A	3	3.0	9	4251	51.5	7,316.3	3.31	14.76	1.38	17.55	48.85	3.44	55.83	375.0	0.30%	100.21	0.88
STONE RIDGE	58	53A	54A	14	3.0	42	4338	98.5	7,614.7	3.30	15.06	1.43	17.91	49.73	3.58	56.85	375.0	0.30%	100.21	0.88
STONE RIDGE	59	54A	55A	16	3.0	48	4386	98.5	7,713.2	3.30	15.23	1.45	18.10	50.21	3.62	57.38	375.0	0.30%	100.21	0.88
STONE RIDGE	61	55A	38A	1	3.0	3	4389	24.0	7,737.2	3.30	15.24	1.45	18.11	50.24	3.64	57.42	375.0	0.30%	100.21	0.88
STONE RIDGE	62	38A	56A	7	3.0	21	7290	69.8	10,180.5	3.09	25.31	1.91	28.64	78.20	4.78	86.53	375.0	3.50%	342.27	3.00
STONE RIDGE	63	56A	EX.57A	11	3.0	33	7323	69.8	10,250.3	3.09	25.43	1.93	28.77	78.51	4.82	86.87	375.0	0.40%	115.71	1.01
DIANA	64	58A	59A	19	3.0	57	57	100.8	100.8	4.00	0.20	0.02	0.22	0.79	0.05	0.84	200.0	1.00%	34.22	1.06
DIANA	66	59A	60A	22	3.0	66	123	90.0	190.8	4.00	0.43	0.04	0.46	1.71	0.09	1.80	200.0	1.10%	35.89	1.11
TRAILSIDE RD (AREA 2)	65	-	60A	208	3.0	624	624	1,025.4	1,025.4	3.92	2.17	0.19	2.36	8.50	0.48	8.98	200.0	1.00%	34.22	1.06

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
DATE: 2023-03-03

STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
DIANA	67	60A	61A	11	3.0	33	780	55.2	1,271.4	3.87	2.71	0.24	2.95	10.47	0.60	11.07	200.0	0.96%	33.53	1.03
DIANA	68	61A	62A	3	3.0	9	789	11.0	1,282.4	3.86	2.74	0.24	2.98	10.59	0.60	11.19	200.0	1.00%	34.22	1.06
DIANA	69	62A	63A	12	3.0	36	825	73.5	1,355.9	3.85	2.86	0.25	3.12	11.04	0.64	11.67	200.0	0.98%	33.88	1.04
DIANA	70	63A	64A	3	3.0	9	834	11.0	1,366.9	3.85	2.90	0.26	3.15	11.15	0.64	11.79	200.0	1.00%	34.22	1.06
DIANA	71	64A	65A	15	3.0	45	879	79.1	1,446.0	3.84	3.05	0.27	3.32	11.71	0.68	12.39	200.0	0.97%	33.71	1.04
DIANA	72	65A	66A	12	3.0	36	915	79.1	1,525.1	3.82	3.18	0.29	3.46	12.15	0.72	12.87	200.0	0.75%	29.64	0.91
DIANA	73	66A	67A	3	3.0	9	924	9.9	1,535.0	3.82	3.21	0.29	3.50	12.26	0.72	12.98	200.0	0.75%	29.64	0.91
DIANA	74	67A	68A	20	3.0	60	984	110.0	1,645.0	3.80	3.42	0.31	3.73	13.00	0.77	13.77	200.0	0.51%	24.44	0.75
DIANA	75	68A	69A	4	3.0	12	996	23.3	1,668.3	3.80	3.46	0.31	3.77	13.15	0.78	13.93	200.0	1.29%	38.87	1.20
DIANA	76	70A	69A	4	3.0	12	12	40.0	40.0	4.00	0.04	0.01	0.05	0.17	0.02	0.19	200.0	1.64%	43.83	1.35
MED BLK 843	101	109A	69A	55	3.0	3	3	43.0	173.0	4.00	0.01	0.03	0.04	0.04	0.08	0.12	200.0	0.50%	24.20	0.75
ISABELLA ROAD	77	69A	71A	13	3.0	39	1,050	94.8	1,976.1	3.79	3.65	0.37	4.02	13.80	0.93	14.73	200.0	0.60%	26.51	0.82
ISABELLA ROAD	78	71A	72A	3	3.0	9	1,059	28.0	2,004.1	3.78	3.68	0.38	4.05	13.91	0.94	14.86	200.0	0.60%	26.51	0.82
DIANA	79	58A	73A	2	3.0	6	6	11.0	11.0	4.00	0.02	0.00	0.02	0.08	0.01	0.09	200.0	2.50%	54.11	1.67
DIANA	80	73A	74A	15	3.0	45	51	108.0	119.0	4.00	0.18	0.02	0.20	0.71	0.06	0.76	200.0	2.50%	54.11	1.67
DIANA	81	74A	75A	14	3.0	42	93	85.0	204.0	4.00	0.32	0.04	0.36	1.29	0.10	1.39	200.0	2.50%	54.11	1.67
DIANA	82	75A	72A	9	3.0	27	120	82.0	286.0	4.00	0.42	0.05	0.47	1.67	0.13	1.80	200.0	2.55%	54.65	1.69
ISABELLA ROAD	83	72	76	18	3.0	54	1,233	104.1	2,394.2	3.74	4.28	0.45	4.73	16.01	1.13	17.13	200.0	0.70%	28.63	0.88
ISABELLA ROAD	84	76	57	13	3.0	39	1,272	105.6	2,499.8	3.73	4.42	0.47	4.89	16.48	1.17	17.65	200.0	1.16%	36.86	1.14

Stone Ridge Subdivision, City of Orillia
Sanitary Sewer Design Sheet

M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
Qp = P*Q*M/86,400 (Q = 300 L/day/person)
Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
Com.	0.32 L/Ha.s	2.5	0.81L/Ha.s
School	0.27 L/Ha.s	2.5	0.54L/Ha.s
Infl.	0.04 L/Ha.s	2.5	0.10L/Ha.s

FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
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STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
ISABELLA ROAD	85	116	77	9	3.0	27	27	66.3	79.1	4.00	0.09	0.01	0.11	0.38	0.04	0.41	200.0	2.60%	55.18	1.70
ISABELLA ROAD	86	77	78	4	3.0	12	39	14.6	93.7	4.00	0.14	0.02	0.15	0.54	0.04	0.59	200.0	4.80%	74.98	2.31
ISABELLA ROAD	87	78	79	26	3.0	78	117	115.7	209.4	4.00	0.41	0.04	0.45	1.63	0.10	1.72	200.0	2.80%	57.27	1.77
ISABELLA ROAD	88	79	57	23	3.0	69	186	122.9	332.3	4.00	0.65	0.06	0.71	2.58	0.16	2.74	200.0	2.59%	55.08	1.70
STONE RIDGE	89	57	80	4	3.0	12	8,793	90.1	13,172.5	3.01	30.53	2.48	34.42	91.90	6.19	101.63	375.0	0.31%	102.52	0.90
EMPEROR	90	81	82	15	3.0	45	45	99.0	99.0	4.00	0.16	0.02	0.17	0.63	0.05	0.67	200.0	1.00%	34.22	1.06
EMPEROR	91	82	83	16	3.0	48	93	96.5	195.5	4.00	0.32	0.04	0.36	1.29	0.09	1.38	200.0	0.60%	26.51	0.82
EMPEROR	92	83	84	16	3.0	48	141	96.5	292.0	4.00	0.49	0.05	0.54	1.96	0.14	2.10	200.0	0.60%	26.51	0.82
EMPEROR	93	84	85	13	3.0	39	180	81.8	373.8	4.00	0.63	0.07	0.70	2.50	0.18	2.68	200.0	1.88%	46.93	1.45
BLOCK 211	XX	29	85	0	3.0	0	264	91.4	767.5	4.00	0.92	0.14	1.06	3.67	0.36	4.03	200.0	6.10%	84.53	2.61
EMPEROR	94	85	86	6	3.0	18	462	40.5	1181.8	3.99	1.60	0.22	1.83	6.40	0.56	6.96	200.0	2.00%	48.40	1.49
EMPEROR	95	86	87	14	3.0	42	504	91.5	1273.3	3.97	1.75	0.24	1.99	6.95	0.60	7.55	200.0	3.40%	63.11	1.95
EMPEROR	96	87	88	14	3.0	42	546	90.0	1363.3	3.95	1.90	0.26	2.15	7.50	0.64	8.14	200.0	0.75%	29.64	0.91
EMPEROR	97	88	80	6	3.0	18	564	94.3	1457.6	3.95	1.96	0.27	2.23	7.73	0.68	8.41	200.0	0.50%	24.20	0.75
LAND SWAP				INST.	Qtot = (0.0023 x 5,000)					2.74			11.50			31.51	300.0	0.30%	55.27	0.76
HORN FARM				IND		66.40	ha.			Qtot = (0.42+0.04) x Area			35.86			89.64	375.0	0.30%	100.21	0.88
WEST RIDGE	130	114	115	IND		1.46	ha.	90.1	90.1	2.50	0.61	0.02	47.99	1.53	0.04	122.73	450.0	0.30%	162.95	0.99
WEST RIDGE	131	115	91	IND		1.21	ha.	110.0	200.1	2.50	0.51	0.02	48.52	1.27	0.05	124.05	450.0	0.30%	162.95	0.99

Stone Ridge Subdivision, City of Orillia
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M = 1+(14/(4+(P/1000)^0.5)) (2 <= M <= 4)
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Qi = L/1000*I*Diameter/8,640 (I = 180 L/day/mm(dia)/km)
Qtot = Qp + Qi n = 0.013

Land Use	Ave. Flow	Peak Fact.	Peak Flow
Res.	300 L/cap.d	Harm.	Varies
Ind.	0.42 L/Ha.s	2.5	1.25L/Ha.s
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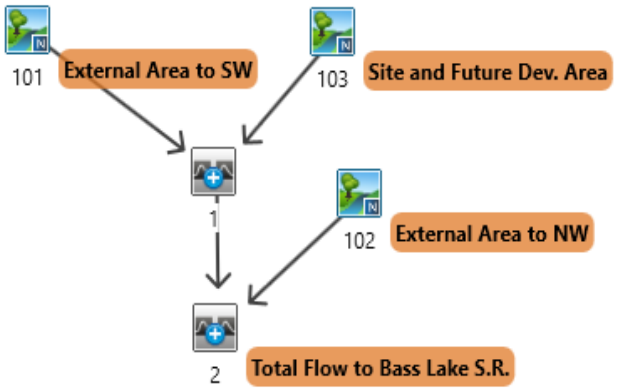
FILE #: 440-04139-20
MUN. HOUSING: 43T-00512
CALC: MJWP
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STREETS	AREA	MANHOLE		DWELL	POP/	POP	POP	LENGTH	LENGTH	M	AVG. DAILY FLOW			PEAK FLOW			D	S	Q FULL	V FULL
		FROM	TO	UNITS	UNIT	(P)	(ACC)	(m)	ACC. (m)	PEAK F	Qp	Qi	Qtot	Qp	Qi	Qtot	(mm)	(%)	(L/S)	(m/s)
WEST RIDGE	119	91	92	IND		1.06	ha.	110.6	310.7	2.50	0.45	0.02	48.98	1.11	0.05	125.21	450.0	0.30%	162.95	0.99
WEST RIDGE	102	92	93	IND		1.00	ha.	110.0	420.7	2.50	0.42	0.02	49.42	1.05	0.05	126.31	450.0	0.30%	162.95	0.99
EXTERNAL						9.60	ha.			Qtot = (0.42+0.04) x Area			5.18			12.96	200.0	0.40%	21.64	0.67
WEST RIDGE	103	93	94	IND		1.23	ha.	74.9	495.6	2.50	0.52	0.01	55.14	1.29	0.04	140.60	525.0	0.30%	245.79	1.10
WEST RIDGE		94	95	IND				86.6	582.2	2.50	0.00	0.02	55.15	0.00	0.04	140.64	525.0	0.30%	245.79	1.10
WEST RIDGE	104	95	96	IND		1.23	ha.	110.1	692.3	2.50	0.52	0.02	55.69	1.29	0.05	141.98	525.0	0.30%	245.79	1.10
WEST RIDGE		96	97	IND				75.8	768.1	2.50	0.00	0.01	55.70	0.00	0.04	142.02	525.0	0.30%	245.79	1.10
WEST RIDGE	105	97	98	IND		1.52	ha.	101.6	869.7	2.50	0.64	0.02	56.36	1.60	0.05	143.66	525.0	0.30%	245.79	1.10
Hi Density - Blk 851	106	Stub	98	272	3.0	816	816	21.3	141.3	3.86	2.83	0.00	2.84	10.9	0.01	10.93	200.0	2.00%	48.40	1.49
HARVIE SETTLEMENT		EX MH	98			12.50	ha.	21.4		Qtot = (0.42+0.04) x Area			6.75			16.88	200.0	1.60%	43.29	1.33
WEST RIDGE	107	98	108					110.0		2.50	0.00	0.02	65.97	0.00	0.05	172.57	525.0	0.30%	245.79	1.10
EXT HUNTER						12.00	ha.			Qtot = (0.42+0.04) x Area			6.48			16.20	200.0	0.30%	18.75	0.58

Appendix E

Pre-Development Visual OTTHYMO Modelling

Schematic and results taken from TSH Bass Lake SWM Report dated April 2007.



Appendix G

Letters to Secondary Utilities

Appendix H

Pearson Engineering Drawings

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

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

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-1detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-1summary.txt

DATE: 5/9/2006 TIME: 1:01:30 PM

USER: JSC

COMMENTS: _____

****
** SIMULATION NUMBER: 1 **
****

| READ STORM | Ptotal= 46.11 mm |

Filename: C:\Visual OTTHYMO v1.02\Storms\2yrscs.st
Comments: * City of Barrie - 2 Yr SCS-II (24hr) St

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
.20	.46	6.20	.92	12.20	9.18	18.20	.92
.40	.46	6.40	.92	12.40	5.74	18.40	.92
.60	.46	6.60	.92	12.60	4.13	18.60	.92
.80	.46	6.80	.92	12.80	3.90	18.80	.92
1.00	.46	7.00	.92	13.00	2.75	19.00	.92
1.20	.46	7.20	.92	13.20	2.30	19.20	.69
1.40	.46	7.40	.92	13.40	2.30	19.40	.69
1.60	.46	7.60	.92	13.60	2.30	19.60	.69
1.80	.46	7.80	.92	13.80	2.30	19.80	.69
2.00	.46	8.00	.92	14.00	2.30	20.00	.69
2.20	.46	8.20	1.38	14.20	1.38	20.20	.69
2.40	.46	8.40	1.38	14.40	1.38	20.40	.69
2.60	.46	8.60	1.38	14.60	1.38	20.60	.69
2.80	.46	8.80	1.38	14.80	1.38	20.80	.69
3.00	.46	9.00	1.38	15.00	1.38	21.00	.69
3.20	.46	9.20	1.38	15.20	1.38	21.20	.46
3.40	.46	9.40	1.38	15.40	1.38	21.40	.46
3.60	.46	9.60	1.38	15.60	1.38	21.60	.46
3.80	.46	9.80	1.38	15.80	1.38	21.80	.46
4.00	.46	10.00	1.38	16.00	1.38	22.00	.46
4.20	.92	10.20	2.52	16.20	.92	22.20	.46
4.40	.92	10.40	2.52	16.40	.92	22.40	.46
4.60	.92	10.60	2.52	16.60	.92	22.60	.46
4.80	.92	10.80	2.52	16.80	.92	22.80	.46
5.00	.92	11.00	2.52	17.00	.92	23.00	.46
5.20	.92	11.20	3.44	17.20	.92	23.20	.46
5.40	.92	11.40	5.05	17.40	.92	23.40	.46
5.60	.92	11.60	11.47	17.60	.92	23.60	.46
5.80	.92	11.80	25.20	17.80	.92	23.80	.46
6.00	.92	12.00	52.80	18.00	.92	24.00	.46

| CALIB | NASHYD (0101) | ID= 1 DT= 5.0 min |

Area (ha)= 24.80 Curve Number (CN)= 54.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= .75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
.083	.46	6.083	.92	12.083	9.19	18.08	.92
.167	.46	6.167	.92	12.167	9.18	18.17	.92
.250	.46	6.250	.92	12.250	7.12	18.25	.92
.333	.46	6.333	.92	12.333	5.74	18.33	.92
.417	.46	6.417	.92	12.417	5.42	18.42	.92
.500	.46	6.500	.92	12.500	4.13	18.50	.92
.583	.46	6.583	.92	12.583	4.13	18.58	.92
.667	.46	6.667	.92	12.667	3.95	18.67	.92
.750	.46	6.750	.92	12.750	3.90	18.75	.92
.833	.46	6.833	.92	12.833	3.44	18.83	.92
.917	.46	6.917	.92	12.917	2.75	18.92	.92
1.000	.46	7.000	.92	13.000	2.75	19.00	.92
1.083	.46	7.083	.92	13.083	2.30	19.08	.69
1.167	.46	7.167	.92	13.167	2.30	19.17	.69
1.250	.46	7.250	.92	13.250	2.30	19.25	.69
1.333	.46	7.333	.92	13.333	2.30	19.33	.69
1.417	.46	7.417	.92	13.417	2.30	19.42	.69
1.500	.46	7.500	.92	13.500	2.30	19.50	.69
1.583	.46	7.583	.92	13.583	2.30	19.58	.69
1.667	.46	7.667	.92	13.667	2.30	19.67	.69
1.750	.46	7.750	.92	13.750	2.30	19.75	.69
1.833	.46	7.833	.92	13.833	2.30	19.83	.69
1.917	.46	7.917	.92	13.917	2.30	19.92	.69
2.000	.46	8.000	.92	14.000	2.30	20.00	.69
2.083	.46	8.083	1.38	14.083	1.38	20.08	.69
2.167	.46	8.167	1.38	14.167	1.38	20.17	.69
2.250	.46	8.250	1.38	14.250	1.38	20.25	.69
2.333	.46	8.333	1.38	14.333	1.38	20.33	.69
2.417	.46	8.417	1.38	14.417	1.38	20.42	.69
2.500	.46	8.500	1.38	14.500	1.38	20.50	.69
2.583	.46	8.583	1.38	14.583	1.38	20.58	.69
2.667	.46	8.667	1.38	14.667	1.38	20.67	.69
2.750	.46	8.750	1.38	14.750	1.38	20.75	.69
2.833	.46	8.833	1.38	14.833	1.38	20.83	.69
2.917	.46	8.917	1.38	14.917	1.38	20.92	.69
3.000	.46	9.000	1.38	15.000	1.38	21.00	.69
3.083	.46	9.083	1.38	15.083	1.38	21.08	.46
3.167	.46	9.167	1.38	15.167	1.38	21.17	.46
3.250	.46	9.250	1.38	15.250	1.38	21.25	.46
3.333	.46	9.333	1.38	15.333	1.38	21.33	.46
3.417	.46	9.417	1.38	15.417	1.38	21.42	.46
3.500	.46	9.500	1.38	15.500	1.38	21.50	.46
3.583	.46	9.583	1.38	15.583	1.38	21.58	.46
3.667	.46	9.667	1.38	15.667	1.38	21.67	.46
3.750	.46	9.750	1.38	15.750	1.38	21.75	.46
3.833	.46	9.833	1.38	15.833	1.38	21.83	.46
3.917	.46	9.917	1.38	15.917	1.38	21.92	.46
4.000	.46	10.000	1.38	16.000	1.38	22.00	.46
4.083	.92	10.083	2.52	16.083	.92	22.08	.46
4.167	.92	10.167	2.52	16.167	.92	22.17	.46
4.250	.92	10.250	2.52	16.250	.92	22.25	.46
4.333	.92	10.333	2.52	16.333	.92	22.33	.46
4.417	.92	10.417	2.52	16.417	.92	22.42	.46
4.500	.92	10.500	2.52	16.500	.92	22.50	.46
4.583	.92	10.583	2.52	16.583	.92	22.58	.46
4.667	.92	10.667	2.52	16.667	.92	22.67	.46
4.750	.92	10.750	2.52	16.750	.92	22.75	.46
4.833	.92	10.833	2.52	16.833	.92	22.83	.46
4.917	.92	10.917	2.52	16.917	.92	22.92	.46
5.000	.92	11.000	2.52	17.000	.92	23.00	.46
5.083	.92	11.083	3.44	17.083	.92	23.08	.46
5.167	.92	11.167	3.44	17.167	.92	23.17	.46
5.250	.92	11.250	4.41	17.250	.92	23.25	.46
5.333	.92	11.333	5.05	17.333	.92	23.33	.46
5.417	.92	11.417	6.33	17.417	.92	23.42	.46
5.500	.92	11.500	11.47	17.500	.92	23.50	.46
5.583	.92	11.583	11.47	17.583	.92	23.58	.46
5.667	.92	11.667	22.45	17.667	.92	23.67	.46
5.750	.92	11.750	25.20	17.750	.92	23.75	.46
5.833	.92	11.833	36.24	17.833	.92	23.83	.46
5.917	.92	11.917	52.80	17.917	.92	23.92	.46
6.000	.92	12.000	52.80	18.000	.92	24.00	.46

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= .149 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 6.564
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = .142

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

CALIB NASHYD (0103) ID= 1 DT= 5.0 min	Area (ha)= 124.70	Curve Number (CN)= 58.0
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00

---------- U.H. Tp(hrs)= 1.71

Unit Hyd Qpeak (cms)= 2.785

PEAK FLOW (cms)= .463 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 7.511
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = .163

(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 (0101):	24.80	.149	12.75	6.56
+ ID2= 2 (0103):	124.70	.463	13.92	7.51
ID = 3 (0001):	149.50	.546	13.58	7.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB NASHYD (0102) ID= 1 DT= 5.0 min |

Area (ha)= 15.30 Curve Number (CN)= 62.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= .28

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= .244 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 8.584
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = .186

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

| ADD HYD (0002) |
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	149.50	.546	13.58	7.35
+ ID2= 2 (0102):	15.30	.244	12.17	8.58
ID = 3 (0002):	164.80	.579	13.50	7.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-1detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-1summary.txt

DATE: 5/9/2006 TIME: 1:01:30 PM

USER: JSC

COMMENTS: _____

```
*****************************
** SIMULATION NUMBER:   1 **
*****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
	START @ .00 hrs								
	READ STORM		12.0						
	[Ptot= 46.11 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\2yrscs.stm								
	remark:* City of Barrie - 2 Yr SCS-II (24hr) Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.15	12.75	6.56	.14	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	.46	13.92	7.51	.16	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	.55	13.58	7.35	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.24	12.17	8.58	.19	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	.58	13.50	7.47	n/a	.000
*									

FINISH

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-2detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-2summary.txt

DATE: 5/9/2006 TIME: 1:01:34 PM

USER: JSC

COMMENTS: _____

```
*****************************
** SIMULATION NUMBER:   2 **
*****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		12.0						
	[Ptot= 66.81 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\5YRSCS.STM								
	remark:* City of Barrie - 5 Yr SCS-II (24hr) Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.32	12.67	13.73	.21	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	.98	13.83	15.55	.23	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	1.16	13.50	15.24	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.51	12.17	17.56	.26	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	1.23	13.42	15.46	n/a	.000
*									

FINISH

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

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***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-3detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-3summary.txt

DATE: 5/9/2006 TIME: 1:01:38 PM

USER: JSC

COMMENTS: _____

```
*****************************
** SIMULATION NUMBER:   3 **
*****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		12.0						
	[Ptot= 80.55 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\10yrscs.stm								
	remark:* City of Barrie - 10 Yr SCS-II (24hr) Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.46	12.67	19.55	.24	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	1.40	13.83	22.00	.27	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	1.66	13.50	21.59	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.72	12.17	24.67	.31	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	1.75	13.33	21.88	n/a	.000
*									

FINISH

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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
      O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
       OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-4detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\SCS Storms-4summary.txt

DATE: 5/9/2006 TIME: 1:01:43 PM

USER: JSC

COMMENTS: _____

```
  ****************************
  ** SIMULATION NUMBER:   4 **
  ****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		12.0						
	[Ptot= 95.55 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\25yrscs.stm								
	remark:* City of Barrie - 25 Yr SCS-II (24hr) Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.61	12.67	26.71	.28	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	1.88	13.83	29.87	.31	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	2.24	13.50	29.35	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.94	12.17	33.28	.35	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	2.36	13.33	29.71	n/a	.000
*									
FINISH									

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

  OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
 O   O    T      T    H   H   Y Y   MM MM  O   O
 O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
 O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
  OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

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***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-1detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-1summary.txt

DATE: 5/9/2006 TIME: 1:07:25 PM

USER: JSC

COMMENTS: _____

```
  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		12.0						
	[Ptot=120.68 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\100YRSCS.STM								
	remark:* City of Barrie - 100 Yr SCS-II (24hr) Storm								
*									
**	CALIB NASHYD [CN=54.0]	0101	1 5.0	24.80	.93	12.67	40.30	.33	.000
	[N = 3.0:Tp .76]								
*									
**	CALIB NASHYD [CN=58.0]	0103	1 5.0	124.70	2.85	13.83	44.66	.37	.000
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	3.39	13.42	43.94	n/a	.000
*									
**	CALIB NASHYD [CN=62.0]	0102	1 5.0	15.30	1.40	12.17	49.29	.41	.000
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	3.58	13.33	44.44	n/a	.000
*									
	FINISH								

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

  OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
 O   O    T      T    H   H   Y Y   MM MM  O   O
 O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
 O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
  OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-1detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-1summary.txt

DATE: 5/9/2006 TIME: 1:09:39 PM

USER: JSC

===<comment>=== This scenario has the following imported file C:\Visual OTTH

```
**************************
** SIMULATION NUMBER:   1 **
**************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		10.0						
	[Ptot= 38.14 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\2yrchi.stm								
	remark:* City of Barrie - 2 Yr CHICAGO Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.12	2.67	4.40	.12	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	.44	4.17	5.06	.13	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	.52	4.00	4.95	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.16	1.83	5.81	.15	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	.57	3.92	5.03	n/a	.000
*									

FINISH

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-2detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-2summary.txt

DATE: 5/9/2006 TIME: 1:09:42 PM

USER: JSC

===<comment>=== This scenario has the following imported file C:\Visual OTTH

```
 ****************************
 ** SIMULATION NUMBER:   2 **
 ****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		10.0						
	[Ptot= 64.69 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\5YRCHI.STM								
	remark:* City of Barrie - 5 Yr CHICAGO Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.32	2.67	12.90	.20	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	1.27	4.25	14.62	.23	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	1.50	4.08	14.34	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.41	1.83	16.53	.26	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	1.65	4.00	14.54	n/a	.000
*									

```
FINISH
```

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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
      O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
       OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms.ott
  Output  filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-3detail.txt
  Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-3summary.txt

DATE: 5/9/2006                              TIME: 1:09:47 PM

USER: JSC

 ===<comment>=== This scenario has the following imported file C:\Visual OTTH
  ****************************
  ** SIMULATION NUMBER:   3 **
  ****************************
  W/E COMMAND              HYD ID   DT     AREA    Qpeak Tpeak   R.V. R.C.    Qbase
                                    min      ha      cms   hrs     mm           cms

  **  START @   .00 hrs
      --------------------
      READ STORM                    10.0
      [ Ptot= 73.86 mm ]
      fname :C:\Visual OTTHYMO v1.02\Storms\10yrchi.stm
      remark:* City of Barrie - 10 Yr CHICAGO Storm
*
  **  CALIB NASHYD        0101  1   5.0    24.80     .44  2.58  16.62  .23    .000
      [CN=54.0          ]
      [ N = 3.0:Tp  .75]
*
  **  CALIB NASHYD        0103  1   5.0   124.70    1.63  4.17  18.76  .25    .000
      [CN=58.0          ]
      [ N = 3.0:Tp 1.71]
*
      ADD [0101 + 0103]   0001  3   5.0   149.50    1.92  4.00  18.40  n/a    .000
*
  **  CALIB NASHYD        0102  1   5.0    15.30     .57  1.83  21.11  .29    .000
      [CN=62.0          ]
      [ N = 3.0:Tp  .28]
*
      ADD [0001 + 0102]   0002  3   5.0   164.80    2.10  3.92  18.65  n/a    .000
*
 FINISH
```

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

  OOO    TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
 O   O     T      T    H   H   Y Y   MM MM  O   O
 O   O     T      T    HHHHH    Y    M M M  O   O   Licensed To:
 O   O     T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
  OOO      T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

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***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-4detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Chicago Storms-4summary.txt

DATE: 5/9/2006 TIME: 1:09:52 PM

USER: JSC

===<comment>=== This scenario has the following imported file C:\Visual OTTH

```
 ****************************
 ** SIMULATION NUMBER:   4 **
 ****************************
```

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		10.0						
	[Ptot= 82.85 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\25YRCHI.STM								
	remark:* City of Barrie - 25 Yr CHICAGO Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.57	2.58	20.60	.25	.000
	[CN=54.0]								
	[N = 3.0:Tp .75]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	2.04	4.08	23.15	.28	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	2.39	3.83	22.73	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	.73	1.83	25.94	.31	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	2.59	3.75	23.03	n/a	.000
*									

FINISH

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

  OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
 O   O    T      T    H   H   Y Y   MM MM  O   O
 O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
 O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
  OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-2detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-2summary.txt

DATE: 5/9/2006 TIME: 1:07:29 PM

USER: JSC

===<comment>=== This scenario has the following imported file C:\Visual OTTH

****
** SIMULATION NUMBER: 2 **
****

W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		10.0						
	[Ptot= 95.00 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\100YRCHI.STM								
	remark:* City of Barrie - 100 Yr CHICAGO Storm								
*									
**	CALIB NASHYD	0101	1 5.0	24.80	.75	2.58	26.44	.28	.000
	[CN=54.0]								
	[N = 3.0:Tp .76]								
*									
**	CALIB NASHYD	0103	1 5.0	124.70	2.61	4.00	29.57	.31	.000
	[CN=58.0]								
	[N = 3.0:Tp 1.71]								
*									
	ADD [0101 + 0103]	0001	3 5.0	149.50	3.08	3.67	29.05	n/a	.000
*									
**	CALIB NASHYD	0102	1 5.0	15.30	1.02	1.83	32.95	.35	.000
	[CN=62.0]								
	[N = 3.0:Tp .28]								
*									
	ADD [0001 + 0102]	0002	3 5.0	164.80	3.32	3.58	29.41	n/a	.000
*									

FINISH

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

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM, Version 1.0
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    HHHHH    Y    M M M  O   O   Licensed To:
O   O    T      T    H   H    Y    M   M  O   O   R.G. Robinson Associates
 OOO     T      T    H   H    Y    M   M   OOO    vo102-0006-01
```

Distributed by Greenland Engineering Group. Trademark (TM), Paul Wisner & Assoc., 1996.

***** S U M M A R Y O U T P U T *****

Input filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm.ott

Output filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-3detail.txt

Summary filename: C:\Visual OTTHYMO v1.02\West\Pre-Dev\Regional Storm-3summary.txt

DATE: 5/9/2006 TIME: 1:07:34 PM

USER: JSC

===<comment>=== This scenario has the following imported file C:\Visual OTTH

****
** SIMULATION NUMBER: 3 **
****

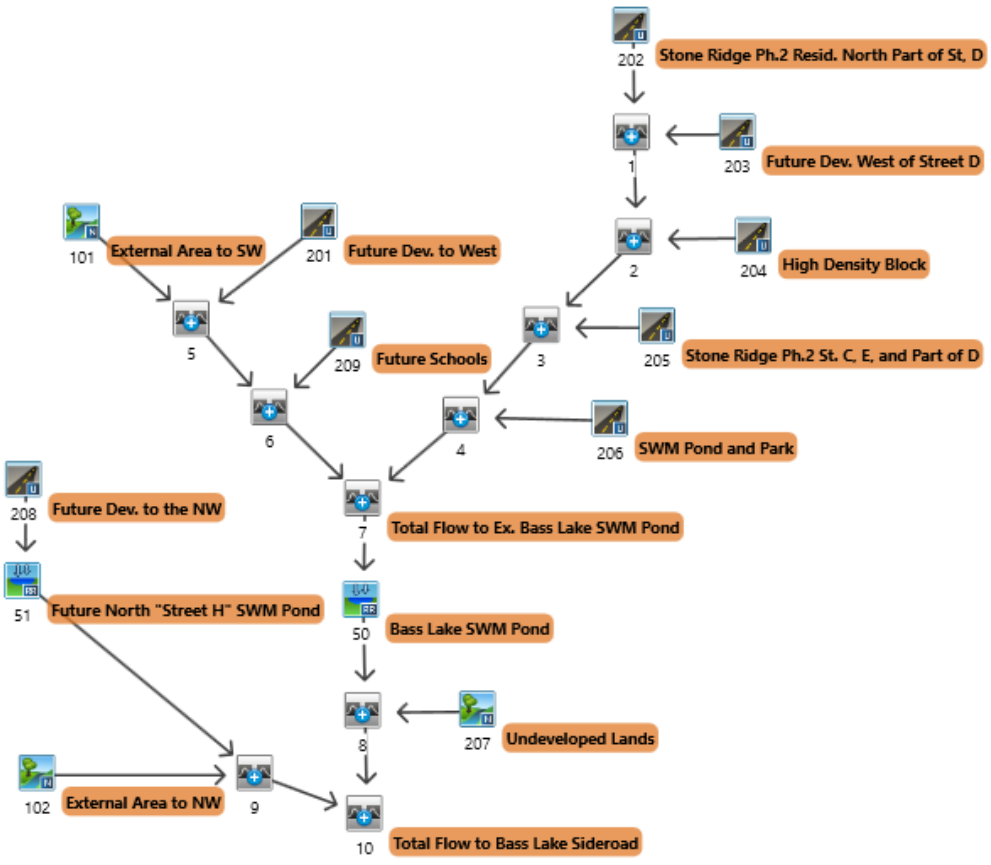
W/E	COMMAND	HYD ID	DT min	AREA ha	Qpeak cms	Tpeak hrs	R.V. mm	R.C.	Qbase cms
**	START @ .00 hrs								
	READ STORM		60.0						
	[Ptot=193.04 mm]								
	fname :C:\Visual OTTHYMO v1.02\Storms\TREGION.STM								
	remark:* Regional Storm - 12 Hour TIMMINS								
*									
**	CALIB NASHYD	0101	1	5.0	24.80	1.15	7.50	87.43	.45	.000
	[CN=54.0]									
	[N = 3.0:Tp .76]									
*										
**	CALIB NASHYD	0103	1	5.0	124.70	4.91	9.58	95.06	.49	.000
	[CN=58.0]									
	[N = 3.0:Tp 1.71]									
*										
*	ADD [0101 + 0103]	0001	3	5.0	149.50	5.84	9.33	93.79	n/a	.000
**	CALIB NASHYD	0102	1	5.0	15.30	1.12	7.00	102.82	.53	.000
	[CN=62.0]									
	[N = 3.0:Tp .28]									
*										
*	ADD [0001 + 0102]	0002	3	5.0	164.80	6.48	9.08	94.63	n/a	.000

FINISH

Appendix F

Post-Development Visual OTTHYMO Modeling

Schematic and results taken from Pearson Engineering Revised model for Bass Lake Sideroad.



```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-b6b0-cc0fca6dc942\fe943f28-525
Summary filename: C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-b6b0-cc0fca6dc942\fe943f28-525

DATE: 03-02-2023 TIME: 02:03:56

USER:

COMMENTS: _____

****
** SIMULATION : Run 01 **
****

READ STORM	Filename: C:\Users\aregmi\AppD ata\Local\Temp\ cf9c7bfd-8cf9-4fc8-b492-3884859d410f\fac06505
Ptotal= 38.14 mm	Comments: B-chi2

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.30	1.00	9.45	2.00	8.56	3.00	4.50
0.17	3.63	1.17	18.56	2.17	7.32	3.17	4.21
0.33	4.06	1.33	63.50	2.33	6.42	3.33	3.99
0.50	4.62	1.50	23.29	2.50	5.76	3.50	3.76
0.67	5.46	1.67	14.05	2.67	5.26	3.67	3.58
0.83	6.81	1.83	10.49	2.83	4.85	3.83	3.40

CALIB NASHYD (0101) ID= 1 DT= 5.0 min	Area (ha)= 24.80 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.75	Curve Number (CN)= 54.0 # 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	3.30	1.083	9.45	2.083	8.56	3.08	4.50
0.167	3.30	1.167	9.45	2.167	8.56	3.17	4.50
0.250	3.63	1.250	18.56	2.250	7.32	3.25	4.21
0.333	3.63	1.333	18.56	2.333	7.32	3.33	4.21
0.417	4.06	1.417	63.50	2.417	6.42	3.42	3.99
0.500	4.06	1.500	63.50	2.500	6.42	3.50	3.99
0.583	4.62	1.583	23.29	2.583	5.76	3.58	3.76
0.667	4.62	1.667	23.29	2.667	5.76	3.67	3.76
0.750	5.46	1.750	14.05	2.750	5.26	3.75	3.58
0.833	5.46	1.833	14.05	2.833	5.26	3.83	3.58
0.917	6.81	1.917	10.49	2.917	4.85	3.92	3.40
1.000	6.81	2.000	10.49	3.000	4.85	4.00	3.40

Unit Hyd Qpeak (cms)= 1.263

```
     PEAK FLOW       (cms)=   0.118 (i)
     TIME TO PEAK    (hrs)=   2.667
     RUNOFF VOLUME    (mm)=   4.401
     TOTAL RAINFALL   (mm)=  38.138
     RUNOFF COEFFICIENT   =   0.115

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  31.64
|ID= 1 DT= 5.0 min |   Total Imp(%)=  49.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      15.50         16.14
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     459.27         40.00
     Mannings n            =      0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.30 | 1.083    9.45 | 2.083    8.56 |  3.08    4.50
              0.167    3.30 | 1.167    9.45 | 2.167    8.56 |  3.17    4.50
              0.250    3.63 | 1.250   18.56 | 2.250    7.32 |  3.25    4.21
              0.333    3.63 | 1.333   18.56 | 2.333    7.32 |  3.33    4.21
              0.417    4.06 | 1.417   63.50 | 2.417    6.42 |  3.42    3.99
              0.500    4.06 | 1.500   63.50 | 2.500    6.42 |  3.50    3.99
              0.583    4.62 | 1.583   23.29 | 2.583    5.76 |  3.58    3.76
              0.667    4.62 | 1.667   23.29 | 2.667    5.76 |  3.67    3.76
              0.750    5.46 | 1.750   14.05 | 2.750    5.26 |  3.75    3.58
              0.833    5.46 | 1.833   14.05 | 2.833    5.26 |  3.83    3.58
              0.917    6.81 | 1.917   10.49 | 2.917    4.85 |  3.92    3.40
              1.000    6.81 | 2.000   10.49 | 3.000    4.85 |  4.00    3.40

     Max.Eff.Inten.(mm/hr)=      63.50         12.28
                 over (min)       5.00         25.00
     Storage Coeff.  (min)=       6.60 (ii)    19.80 (ii)
     Unit Hyd. Tpeak (min)=       5.00         20.00
     Unit Hyd. peak  (cms)=       0.18          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.73          0.33        1.838 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.83         1.50
     RUNOFF VOLUME    (mm)=      36.64          9.51        19.55
     TOTAL RAINFALL   (mm)=      38.14         38.14        38.14
     RUNOFF COEFFICIENT   =       0.96          0.25         0.51


       (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.

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| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):    24.80   0.118     2.67     4.40
      + ID2= 2 (  0201):    31.64   1.838     1.50    19.55
        ==========================================================
        ID = 3 (  0005):    56.44   1.846     1.50    12.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0209)|   Area    (ha)=   4.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.11          1.47
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     174.74         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	3.30	1.083	9.45	2.083	8.56	3.08	4.50
0.167	3.30	1.167	9.45	2.167	8.56	3.17	4.50
0.250	3.63	1.250	18.56	2.250	7.32	3.25	4.21
0.333	3.63	1.333	18.56	2.333	7.32	3.33	4.21
0.417	4.06	1.417	63.50	2.417	6.42	3.42	3.99
0.500	4.06	1.500	63.50	2.500	6.42	3.50	3.99
0.583	4.62	1.583	23.29	2.583	5.76	3.58	3.76
0.667	4.62	1.667	23.29	2.667	5.76	3.67	3.76
0.750	5.46	1.750	14.05	2.750	5.26	3.75	3.58
0.833	5.46	1.833	14.05	2.833	5.26	3.83	3.58
0.917	6.81	1.917	10.49	2.917	4.85	3.92	3.40
1.000	6.81	2.000	10.49	3.000	4.85	4.00	3.40

Max.Eff.Inten.(mm/hr)=	63.50	7.80		
over (min)	5.00	25.00		
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.26	0.07		
			TOTALS	
PEAK FLOW (cms)=	0.52	0.02	0.534 (iii)	
TIME TO PEAK (hrs)=	1.50	1.75	1.50	
RUNOFF VOLUME (mm)=	36.64	7.73	27.39	
TOTAL RAINFALL (mm)=	38.14	38.14	38.14	
RUNOFF COEFFICIENT =	0.96	0.20	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 (0006)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0209):	4.58	0.534	1.50	27.39
	+ ID2= 2 (0005):	56.44	1.846	1.50	12.89
	ID = 3 (0006):	61.02	2.380	1.50	13.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0205) | ID= 1 DT= 5.0 min

Area (ha)= 15.87
Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	3.30	1.083	9.45	2.083	8.56	3.08	4.50
0.167	3.30	1.167	9.45	2.167	8.56	3.17	4.50
0.250	3.63	1.250	18.56	2.250	7.32	3.25	4.21
0.333	3.63	1.333	18.56	2.333	7.32	3.33	4.21
0.417	4.06	1.417	63.50	2.417	6.42	3.42	3.99
0.500	4.06	1.500	63.50	2.500	6.42	3.50	3.99
0.583	4.62	1.583	23.29	2.583	5.76	3.58	3.76
0.667	4.62	1.667	23.29	2.667	5.76	3.67	3.76
0.750	5.46	1.750	14.05	2.750	5.26	3.75	3.58
0.833	5.46	1.833	14.05	2.833	5.26	3.83	3.58
0.917	6.81	1.917	10.49	2.917	4.85	3.92	3.40
1.000	6.81	2.000	10.49	3.000	4.85	4.00	3.40

Max.Eff.Inten.(mm/hr)=	63.50	13.06

```
                over (min)        5.00         25.00
     Storage Coeff.  (min)=       6.00 (ii)    30.00 (ii)
     Unit Hyd. Tpeak (min)=       5.00         30.00
     Unit Hyd. peak  (cms)=       0.19          0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.72          0.15     0.752 (iii)
     TIME TO PEAK    (hrs)=       1.50          2.08      1.50
     RUNOFF VOLUME    (mm)=      36.64          9.77     17.83
     TOTAL RAINFALL   (mm)=      38.14         38.14     38.14
     RUNOFF COEFFICIENT   =       0.96          0.26      0.47


       (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.

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--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   6.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  51.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.05          2.70
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     212.13         40.00
     Mannings n             =     0.013         0.250

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


                            ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.30 | 1.083    9.45 | 2.083    8.56 |  3.08    4.50
              0.167    3.30 | 1.167    9.45 | 2.167    8.56 |  3.17    4.50
              0.250    3.63 | 1.250   18.56 | 2.250    7.32 |  3.25    4.21
              0.333    3.63 | 1.333   18.56 | 2.333    7.32 |  3.33    4.21
              0.417    4.06 | 1.417   63.50 | 2.417    6.42 |  3.42    3.99
              0.500    4.06 | 1.500   63.50 | 2.500    6.42 |  3.50    3.99
              0.583    4.62 | 1.583   23.29 | 2.583    5.76 |  3.58    3.76
              0.667    4.62 | 1.667   23.29 | 2.667    5.76 |  3.67    3.76
              0.750    5.46 | 1.750   14.05 | 2.750    5.26 |  3.75    3.58
              0.833    5.46 | 1.833   14.05 | 2.833    5.26 |  3.83    3.58
              0.917    6.81 | 1.917   10.49 | 2.917    4.85 |  3.92    3.40
              1.000    6.81 | 2.000   10.49 | 3.000    4.85 |  4.00    3.40

     Max.Eff.Inten.(mm/hr)=      63.50         12.07
                over (min)        5.00         25.00
     Storage Coeff.  (min)=       4.20 (ii)    18.00 (ii)
     Unit Hyd. Tpeak (min)=       5.00         20.00
     Unit Hyd. peak  (cms)=       0.24          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.57          0.06     0.586 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.83      1.50
     RUNOFF VOLUME    (mm)=      36.64          9.44     23.31
     TOTAL RAINFALL   (mm)=      38.14         38.14     38.14
     RUNOFF COEFFICIENT   =       0.96          0.25      0.61

***** 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.

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| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   5.73
|ID= 1 DT= 5.0 min |   Total Imp(%)=  62.00   Dir. Conn.(%)=  46.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.55          2.18
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.50          2.00
     Length            (m)=     195.48         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	3.30	1.083	9.45	2.083	8.56	3.08	4.50
0.167	3.30	1.167	9.45	2.167	8.56	3.17	4.50
0.250	3.63	1.250	18.56	2.250	7.32	3.25	4.21
0.333	3.63	1.333	18.56	2.333	7.32	3.33	4.21
0.417	4.06	1.417	63.50	2.417	6.42	3.42	3.99
0.500	4.06	1.500	63.50	2.500	6.42	3.50	3.99
0.583	4.62	1.583	23.29	2.583	5.76	3.58	3.76
0.667	4.62	1.667	23.29	2.667	5.76	3.67	3.76
0.750	5.46	1.750	14.05	2.750	5.26	3.75	3.58
0.833	5.46	1.833	14.05	2.833	5.26	3.83	3.58
0.917	6.81	1.917	10.49	2.917	4.85	3.92	3.40
1.000	6.81	2.000	10.49	3.000	4.85	4.00	3.40

Max.Eff.Inten.(mm/hr)=	63.50	17.78	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.43	0.06	0.456 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	36.64	10.78	22.67
TOTAL RAINFALL (mm)=	38.14	38.14	38.14
RUNOFF COEFFICIENT =	0.96	0.28	0.59

***** 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.

CALIB
STANDHYD (0202)
ID= 1 DT= 5.0 min

Area (ha)= 7.92
Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	3.30	1.083	9.45	2.083	8.56	3.08	4.50
0.167	3.30	1.167	9.45	2.167	8.56	3.17	4.50
0.250	3.63	1.250	18.56	2.250	7.32	3.25	4.21
0.333	3.63	1.333	18.56	2.333	7.32	3.33	4.21
0.417	4.06	1.417	63.50	2.417	6.42	3.42	3.99
0.500	4.06	1.500	63.50	2.500	6.42	3.50	3.99
0.583	4.62	1.583	23.29	2.583	5.76	3.58	3.76
0.667	4.62	1.667	23.29	2.667	5.76	3.67	3.76
0.750	5.46	1.750	14.05	2.750	5.26	3.75	3.58
0.833	5.46	1.833	14.05	2.833	5.26	3.83	3.58
0.917	6.81	1.917	10.49	2.917	4.85	3.92	3.40
1.000	6.81	2.000	10.49	3.000	4.85	4.00	3.40

Max.Eff.Inten.(mm/hr)=	63.50	13.06	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.39	0.08	0.406 (iii)
TIME TO PEAK (hrs)=	1.50	2.08	1.50
RUNOFF VOLUME (mm)=	36.64	9.77	17.83
TOTAL RAINFALL (mm)=	38.14	38.14	38.14
RUNOFF COEFFICIENT =	0.96	0.26	0.47

***** 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.

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--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0202):     7.92   0.406     1.50    17.83
      + ID2= 2 (  0203):     5.73   0.456     1.50    22.67
        ================================================
        ID = 3 (  0001):    13.65   0.862     1.50    19.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0002)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):    13.65   0.862     1.50    19.86
      + ID2= 2 (  0204):     6.75   0.586     1.50    23.31
        ================================================
        ID = 3 (  0002):    20.40   1.448     1.50    21.00

     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 (  0002):    20.40   1.448     1.50    21.00
      + ID2= 2 (  0205):    15.87   0.752     1.50    17.83
        ================================================
        ID = 3 (  0003):    36.27   2.200     1.50    19.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52         5.99
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     251.79        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
              0.083     3.30 | 1.083     9.45 | 2.083     8.56 |  3.08     4.50
              0.167     3.30 | 1.167     9.45 | 2.167     8.56 |  3.17     4.50
              0.250     3.63 | 1.250    18.56 | 2.250     7.32 |  3.25     4.21
              0.333     3.63 | 1.333    18.56 | 2.333     7.32 |  3.33     4.21
              0.417     4.06 | 1.417    63.50 | 2.417     6.42 |  3.42     3.99
              0.500     4.06 | 1.500    63.50 | 2.500     6.42 |  3.50     3.99
              0.583     4.62 | 1.583    23.29 | 2.583     5.76 |  3.58     3.76
              0.667     4.62 | 1.667    23.29 | 2.667     5.76 |  3.67     3.76
              0.750     5.46 | 1.750    14.05 | 2.750     5.26 |  3.75     3.58
              0.833     5.46 | 1.833    14.05 | 2.833     5.26 |  3.83     3.58
              0.917     6.81 | 1.917    10.49 | 2.917     4.85 |  3.92     3.40
              1.000     6.81 | 2.000    10.49 | 3.000     4.85 |  4.00     3.40

     Max.Eff.Inten.(mm/hr)=      63.50         7.80
               over (min)         5.00        25.00
     Storage Coeff.  (min)=       5.33 (ii)   24.92 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.21         0.05
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.07          0.566 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00           1.50
     RUNOFF VOLUME    (mm)=      37.14         7.73          18.61
     TOTAL RAINFALL   (mm)=      38.14        38.14          38.14
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     RUNOFF COEFFICIENT   =       0.97         0.20           0.49


       (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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   0.566     1.50    18.61
      + ID2= 2 (  0003):    36.27   2.200     1.50    19.62
        ================================================
        ID = 3 (  0004):    45.78   2.766     1.50    19.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   2.766     1.50    19.41
      + ID2= 2 (  0006):    61.02   2.380     1.50    13.98
        ================================================
        ID = 3 (  0007):   106.80   5.146     1.50    16.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000    |   0.1460      3.8400
                       0.0630     0.0000    |   0.1580      4.8470
                       0.0830     0.5050    |   0.1690      5.8850
                       0.1020     1.2290    |   0.3480      6.9520
                       0.1070     1.4240    |   0.8370      8.0490
                       0.1190     2.0370    |  10.8540      9.1760
                       0.1330     2.9100    |  19.0030      9.7510
                       0.1430     3.5940    |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      5.146      1.50      16.31
   OUTFLOW: ID= 1 (  0050)    106.802      0.110      4.75      16.31

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.14
                TIME SHIFT OF PEAK FLOW         (min)=195.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  1.5765

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.30 | 1.083    9.45 | 2.083    8.56 |  3.08    4.50
              0.167    3.30 | 1.167    9.45 | 2.167    8.56 |  3.17    4.50
              0.250    3.63 | 1.250   18.56 | 2.250    7.32 |  3.25    4.21
              0.333    3.63 | 1.333   18.56 | 2.333    7.32 |  3.33    4.21
              0.417    4.06 | 1.417   63.50 | 2.417    6.42 |  3.42    3.99
              0.500    4.06 | 1.500   63.50 | 2.500    6.42 |  3.50    3.99
              0.583    4.62 | 1.583   23.29 | 2.583    5.76 |  3.58    3.76
              0.667    4.62 | 1.667   23.29 | 2.667    5.76 |  3.67    3.76
              0.750    5.46 | 1.750   14.05 | 2.750    5.26 |  3.75    3.58
              0.833    5.46 | 1.833   14.05 | 2.833    5.26 |  3.83    3.58
              0.917    6.81 | 1.917   10.49 | 2.917    4.85 |  3.92    3.40
              1.000    6.81 | 2.000   10.49 | 3.000    4.85 |  4.00    3.40
```

```
     Unit Hyd Qpeak  (cms)=   1.201

     PEAK FLOW       (cms)=   0.155 (i)
     TIME TO PEAK    (hrs)=   3.250
     RUNOFF VOLUME    (mm)=   5.059
     TOTAL RAINFALL   (mm)=  38.138
     RUNOFF COEFFICIENT   =   0.133

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

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

--------------------
| ADD HYD  (  0008)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0207):    34.60   0.155     3.25     5.06
      + ID2= 2 (  0050):   106.80   0.110     4.75    16.31
        ================================================
        ID = 3 (  0008):   141.40   0.261     3.33    13.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=  15.30   Curve Number   (CN)= 62.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.28

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.30 | 1.083    9.45 | 2.083    8.56 |  3.08    4.50
              0.167    3.30 | 1.167    9.45 | 2.167    8.56 |  3.17    4.50
              0.250    3.63 | 1.250   18.56 | 2.250    7.32 |  3.25    4.21
              0.333    3.63 | 1.333   18.56 | 2.333    7.32 |  3.33    4.21
              0.417    4.06 | 1.417   63.50 | 2.417    6.42 |  3.42    3.99
              0.500    4.06 | 1.500   63.50 | 2.500    6.42 |  3.50    3.99
              0.583    4.62 | 1.583   23.29 | 2.583    5.76 |  3.58    3.76
              0.667    4.62 | 1.667   23.29 | 2.667    5.76 |  3.67    3.76
              0.750    5.46 | 1.750   14.05 | 2.750    5.26 |  3.75    3.58
              0.833    5.46 | 1.833   14.05 | 2.833    5.26 |  3.83    3.58
              0.917    6.81 | 1.917   10.49 | 2.917    4.85 |  3.92    3.40
              1.000    6.81 | 2.000   10.49 | 3.000    4.85 |  4.00    3.40

     Unit Hyd Qpeak  (cms)=   2.087

     PEAK FLOW       (cms)=   0.161 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=   5.813
     TOTAL RAINFALL   (mm)=  38.138
     RUNOFF COEFFICIENT   =   0.152

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0208)|   Area    (ha)=   8.27
|ID= 1 DT= 5.0 min |   Total Imp(%)=  54.00   Dir. Conn.(%)=  41.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.47         3.80
     Dep. Storage     (mm)=       1.50         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     234.80        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.30 | 1.083    9.45 | 2.083    8.56 |  3.08    4.50
              0.167    3.30 | 1.167    9.45 | 2.167    8.56 |  3.17    4.50
              0.250    3.63 | 1.250   18.56 | 2.250    7.32 |  3.25    4.21
              0.333    3.63 | 1.333   18.56 | 2.333    7.32 |  3.33    4.21
              0.417    4.06 | 1.417   63.50 | 2.417    6.42 |  3.42    3.99
              0.500    4.06 | 1.500   63.50 | 2.500    6.42 |  3.50    3.99
              0.583    4.62 | 1.583   23.29 | 2.583    5.76 |  3.58    3.76
```

```
                0.667    4.62 | 1.667   23.29 | 2.667    5.76 |  3.67    3.76
                0.750    5.46 | 1.750   14.05 | 2.750    5.26 |  3.75    3.58
                0.833    5.46 | 1.833   14.05 | 2.833    5.26 |  3.83    3.58
                0.917    6.81 | 1.917   10.49 | 2.917    4.85 |  3.92    3.40
                1.000    6.81 | 2.000   10.49 | 3.000    4.85 |  4.00    3.40

     Max.Eff.Inten.(mm/hr)=      63.50        13.27
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       4.80 (ii)   18.60 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.22         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.54         0.09          0.573 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.83           1.50
     RUNOFF VOLUME    (mm)=      36.64         9.84          20.83
     TOTAL RAINFALL   (mm)=      38.14        38.14          38.14
     RUNOFF COEFFICIENT   =       0.96         0.26           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.

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--------------------
| RESERVOIR(  0051)|     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   |   1.2500     0.2000
                          0.2500     0.1000   |   2.5000     0.3000
                          0.6000     0.1500   |   0.0000     0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      0.573      1.50      20.83
   OUTFLOW: ID= 1 (  0051)      8.270      0.165      2.08      20.82

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 28.71
                  TIME SHIFT OF PEAK FLOW         (min)= 35.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0659

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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.161     1.83     5.81
      + ID2= 2 (  0051):     8.27   0.165     2.08    20.82
        ==================================================
        ID = 3 (  0009):    23.57   0.319     1.92    11.08

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

--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.261     3.33    13.56
      + ID2= 2 (  0009):    23.57   0.319     1.92    11.08
        ==================================================
        ID = 3 (  0010):   164.97   0.476     2.25    13.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\06c70d6e-e639-465d-8521-7e99f1aa3729\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\06c70d6e-e639-465d-8521-7e99f1aa3729\scena


DATE: 03-02-2023                              TIME: 02:03:53

USER:



COMMENTS: _____________________________________________________________________

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  **********************************************
  ** SIMULATION : Run 02                       **
  **********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\b6e9966f
| Ptotal= 64.69 mm |    Comments: B-chi5
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    7.09 |  1.00   16.71 |  2.00   15.44 |  3.00    9.17
                0.17    7.67 |  1.17   28.55 |  2.17   13.61 |  3.17    8.69
                0.33    8.41 |  1.33   89.66 |  2.33   12.27 |  3.33    8.26
                0.50    9.37 |  1.50   34.37 |  2.50   11.22 |  3.50    7.90
                0.67   10.72 |  1.67   23.00 |  2.67   10.41 |  3.67    7.57
                0.83   12.83 |  1.83   18.21 |  2.83    9.73 |  3.83    7.26

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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
```

|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.323 (i)
TIME TO PEAK (hrs)= 2.667
RUNOFF VOLUME (mm)= 12.905
TOTAL RAINFALL (mm)= 64.687
RUNOFF COEFFICIENT = 0.199

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Max.Eff.Inten.(mm/hr)=	89.66		31.01	
over (min)	5.00		20.00	
Storage Coeff. (min)=	6.60	(ii)	19.80	(ii)
Unit Hyd. Tpeak (min)=	5.00		20.00	
Unit Hyd. peak (cms)=	0.18		0.06	
				TOTALS
PEAK FLOW (cms)=	2.46		0.78	2.792 (iii)
TIME TO PEAK (hrs)=	1.50		1.75	1.50
RUNOFF VOLUME (mm)=	63.19		24.72	38.95
TOTAL RAINFALL (mm)=	64.69		64.69	64.69
RUNOFF COEFFICIENT =	0.98		0.38	0.60

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		24.80	0.323	2.67	12.90
+ ID2= 2 (0201):		31.64	2.792	1.50	38.95
ID = 3 (0005):		56.44	2.827	1.50	27.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209)	Area (ha)= 4.58		
ID= 1 DT= 5.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.11	1.47	
Dep. Storage (mm)=	1.50	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	174.74	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Max.Eff.Inten.(mm/hr)=	89.66	20.78

```
              over (min)        5.00         20.00
     Storage Coeff.  (min)=     3.60 (ii)    16.20 (ii)
     Unit Hyd. Tpeak (min)=     5.00         15.00
     Unit Hyd. peak  (cms)=     0.26          0.07
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.74          0.05       0.771 (iii)
     TIME TO PEAK    (hrs)=     1.50          1.67        1.50
     RUNOFF VOLUME    (mm)=    63.19         21.14       49.73
     TOTAL RAINFALL   (mm)=    64.69         64.69       64.69
     RUNOFF COEFFICIENT   =     0.98          0.33        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.

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


--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0209):     4.58   0.771     1.50    49.73
      + ID2= 2 (  0005):    56.44   2.827     1.50    27.51
        ==========================================================
        ID = 3 (  0006):    61.02   3.598     1.50    29.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0205)|   Area    (ha)=  15.87
|ID= 1 DT= 5.0 min |   Total Imp(%)=  45.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.14          8.73
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     325.27         40.00
     Mannings n             =     0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.09 | 1.083   16.71 | 2.083   15.44 |  3.08    9.17
               0.167    7.09 | 1.167   16.71 | 2.167   15.44 |  3.17    9.17
               0.250    7.67 | 1.250   28.55 | 2.250   13.61 |  3.25    8.69
               0.333    7.67 | 1.333   28.55 | 2.333   13.61 |  3.33    8.69
               0.417    8.41 | 1.417   89.66 | 2.417   12.27 |  3.42    8.26
               0.500    8.41 | 1.500   89.66 | 2.500   12.27 |  3.50    8.26
               0.583    9.37 | 1.583   34.37 | 2.583   11.22 |  3.58    7.90
               0.667    9.37 | 1.667   34.37 | 2.667   11.22 |  3.67    7.90
               0.750   10.72 | 1.750   23.00 | 2.750   10.41 |  3.75    7.57
               0.833   10.72 | 1.833   23.00 | 2.833   10.41 |  3.83    7.57
               0.917   12.83 | 1.917   18.21 | 2.917    9.73 |  3.92    7.26
               1.000   12.83 | 2.000   18.21 | 3.000    9.73 |  4.00    7.26

     Max.Eff.Inten.(mm/hr)=      89.66         32.76
```

over (min)	5.00	20.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.03	0.36	1.125 (iii)
TIME TO PEAK (hrs)=	1.50	2.00	1.50
RUNOFF VOLUME (mm)=	63.19	25.23	36.62
TOTAL RAINFALL (mm)=	64.69	64.69	64.69
RUNOFF COEFFICIENT =	0.98	0.39	0.57

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Max.Eff.Inten.(mm/hr)=	89.66	30.54	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.80	0.14	0.860 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	63.19	24.57	44.26
TOTAL RAINFALL (mm)=	64.69	64.69	64.69
RUNOFF COEFFICIENT =	0.98	0.38	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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Max.Eff.Inten.(mm/hr)=		89.66	48.21	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.61	0.14	0.677 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	63.19	27.16	43.73
TOTAL RAINFALL	(mm)=	64.69	64.69	64.69
RUNOFF COEFFICIENT	=	0.98	0.42	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Max.Eff.Inten.	(mm/hr)=	89.66	32.76	
	over (min)	5.00	20.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.55	0.19	0.605 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	63.19	25.23	36.62
TOTAL RAINFALL	(mm)=	64.69	64.69	64.69
RUNOFF COEFFICIENT	=	0.98	0.39	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 (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0202):	7.92	0.605	1.50	36.62
	+ ID2= 2 (0203):	5.73	0.677	1.50	43.73
	ID = 3 (0001):	13.65	1.282	1.50	39.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

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       ID1= 1 (  0001):    13.65   1.282     1.50    39.60
     + ID2= 2 (  0204):     6.75   0.860     1.50    44.26
       ================================================
       ID = 3 (  0002):    20.40   2.142     1.50    41.15

     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 (  0002):    20.40   2.142     1.50    41.15
     + ID2= 2 (  0205):    15.87   1.125     1.50    36.62
       ================================================
       ID = 3 (  0003):    36.27   3.267     1.50    39.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52          5.99
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     251.79         40.00
     Mannings n             =     0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    7.09 | 1.083   16.71 | 2.083   15.44 |  3.08    9.17
              0.167    7.09 | 1.167   16.71 | 2.167   15.44 |  3.17    9.17
              0.250    7.67 | 1.250   28.55 | 2.250   13.61 |  3.25    8.69
              0.333    7.67 | 1.333   28.55 | 2.333   13.61 |  3.33    8.69
              0.417    8.41 | 1.417   89.66 | 2.417   12.27 |  3.42    8.26
              0.500    8.41 | 1.500   89.66 | 2.500   12.27 |  3.50    8.26
              0.583    9.37 | 1.583   34.37 | 2.583   11.22 |  3.58    7.90
              0.667    9.37 | 1.667   34.37 | 2.667   11.22 |  3.67    7.90
              0.750   10.72 | 1.750   23.00 | 2.750   10.41 |  3.75    7.57
              0.833   10.72 | 1.833   23.00 | 2.833   10.41 |  3.83    7.57
              0.917   12.83 | 1.917   18.21 | 2.917    9.73 |  3.92    7.26
              1.000   12.83 | 2.000   18.21 | 3.000    9.73 |  4.00    7.26

     Max.Eff.Inten.(mm/hr)=      89.66         20.78
               over (min)         5.00         20.00
     Storage Coeff.  (min)=       4.64 (ii)    17.88 (ii)
     Unit Hyd. Tpeak (min)=       5.00         20.00
     Unit Hyd. peak  (cms)=       0.22          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.81          0.20          0.889 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.75           1.50
     RUNOFF VOLUME    (mm)=      63.69         21.14          36.88
     TOTAL RAINFALL   (mm)=      64.69         64.69          64.69
     RUNOFF COEFFICIENT   =       0.98          0.33           0.57

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

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   0.889     1.50    36.88
      + ID2= 2 (  0003):    36.27   3.267     1.50    39.17
        ================================================
        ID = 3 (  0004):    45.78   4.156     1.50    38.69

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   4.156     1.50    38.69
      + ID2= 2 (  0006):    61.02   3.598     1.50    29.17
        ================================================
        ID = 3 (  0007):   106.80   7.755     1.50    33.25

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000   |   0.1460      3.8400
                       0.0630     0.0000   |   0.1580      4.8470
                       0.0830     0.5050   |   0.1690      5.8850
                       0.1020     1.2290   |   0.3480      6.9520
                       0.1070     1.4240   |   0.8370      8.0490
                       0.1190     2.0370   |  10.8540      9.1760
                       0.1330     2.9100   |  19.0030      9.7510
                       0.1430     3.5940   |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      7.755      1.50      33.25
   OUTFLOW: ID= 1 (  0050)    106.802      0.139      5.17      33.26

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.79
                  TIME SHIFT OF PEAK FLOW         (min)=220.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  3.3258

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.432 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 14.623
TOTAL RAINFALL (mm)= 64.687
RUNOFF COEFFICIENT = 0.226

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.432	3.33	14.62
	+ ID2= 2 (0050):	106.80	0.139	5.17	33.26
	ID = 3 (0008):	141.40	0.563	3.42	28.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.413 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 16.533
TOTAL RAINFALL (mm)= 64.687
RUNOFF COEFFICIENT = 0.256

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

| CALIB | STANDHYD (0208) | ID= 1 DT= 5.0 min |

Area (ha)= 8.27
Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	7.09	1.083	16.71	2.083	15.44	3.08	9.17
0.167	7.09	1.167	16.71	2.167	15.44	3.17	9.17
0.250	7.67	1.250	28.55	2.250	13.61	3.25	8.69
0.333	7.67	1.333	28.55	2.333	13.61	3.33	8.69
0.417	8.41	1.417	89.66	2.417	12.27	3.42	8.26
0.500	8.41	1.500	89.66	2.500	12.27	3.50	8.26
0.583	9.37	1.583	34.37	2.583	11.22	3.58	7.90
0.667	9.37	1.667	34.37	2.667	11.22	3.67	7.90
0.750	10.72	1.750	23.00	2.750	10.41	3.75	7.57
0.833	10.72	1.833	23.00	2.833	10.41	3.83	7.57
0.917	12.83	1.917	18.21	2.917	9.73	3.92	7.26
1.000	12.83	2.000	18.21	3.000	9.73	4.00	7.26

				TOTALS
Max.Eff.Inten.(mm/hr)=		89.66	33.23	
over (min)		5.00	20.00	
Storage Coeff. (min)=		4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.22	0.06	
PEAK FLOW	(cms)=	0.77	0.20	0.859 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	63.19	25.37	40.87
TOTAL RAINFALL	(mm)=	64.69	64.69	64.69
RUNOFF COEFFICIENT	=	0.98	0.39	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.

```
--------------------
| RESERVOIR(  0051)|     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   |   1.2500      0.2000
                          0.2500     0.1000   |   2.5000      0.3000
                          0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      0.859      1.50       40.87
   OUTFLOW: ID= 1 (  0051)      8.270      0.329      2.08       40.86

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 38.32
                  TIME SHIFT OF PEAK FLOW         (min)= 35.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1113

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


--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.413     1.83    16.53
      + ID2= 2 (  0051):     8.27   0.329     2.08    40.86
        ==========================================================
        ID = 3 (  0009):    23.57   0.714     1.92    25.07

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.563     3.42    28.70
      + ID2= 2 (  0009):    23.57   0.714     1.92    25.07
        ==========================================================
        ID = 3 (  0010):   164.97   1.019     2.25    28.18

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\7273186a-230b-45e3-896d-011f07a1c1cf\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\7273186a-230b-45e3-896d-011f07a1c1cf\scena


DATE: 03-02-2023                              TIME: 02:03:55

USER:



COMMENTS: _____________________________________________________________


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  **********************************************
  ** SIMULATION : Run 03                       **
  **********************************************



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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\9dcd1eca
| Ptotal= 73.86 mm |    Comments: B-chi10
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    7.31 |  1.00   19.15 |  2.00   17.50 |  3.00    9.65
                0.17    8.00 |  1.17   35.20 |  2.17   15.16 |  3.17    9.17
                0.33    8.53 |  1.33  106.93 |  2.33   13.48 |  3.33    8.69
                0.50    9.78 |  1.50   43.31 |  2.50   12.22 |  3.50    8.26
                0.67   11.03 |  1.67   27.46 |  2.67   11.23 |  3.67    7.87
                0.83   14.20 |  1.83   21.08 |  2.83   10.41 |  3.83    7.54

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
```

|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.437 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 16.624
TOTAL RAINFALL (mm)= 73.860
RUNOFF COEFFICIENT = 0.225

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.(mm/hr)=	106.93	49.58	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	2.94	1.06	3.380 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	72.36	30.86	46.21
TOTAL RAINFALL (mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT =	0.98	0.42	0.63

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		24.80	0.437	2.58	16.62
+ ID2= 2 (0201):		31.64	3.380	1.50	46.21
ID = 3 (0005):		56.44	3.428	1.50	33.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209)	Area (ha)= 4.58		
ID= 1 DT= 5.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.11	1.47	
Dep. Storage (mm)=	1.50	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	174.74	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.(mm/hr)=	106.93	28.30

```
              over (min)        5.00         20.00
     Storage Coeff.  (min)=     3.60 (ii)    16.20 (ii)
     Unit Hyd. Tpeak (min)=     5.00         15.00
     Unit Hyd. peak  (cms)=     0.26          0.07
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.89          0.07       0.924 (iii)
     TIME TO PEAK    (hrs)=     1.50          1.67        1.50
     RUNOFF VOLUME    (mm)=    72.36         26.68       57.74
     TOTAL RAINFALL   (mm)=    73.86         73.86       73.86
     RUNOFF COEFFICIENT   =     0.98          0.36        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.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0209):     4.58   0.924     1.50    57.74
      + ID2= 2 (  0005):    56.44   3.428     1.50    33.21
        ==========================================================
        ID = 3 (  0006):    61.02   4.352     1.50    35.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0205)|   Area    (ha)=  15.87
|ID= 1 DT= 5.0 min |   Total Imp(%)=  45.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.14          8.73
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     325.27         40.00
     Mannings n             =     0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.31 | 1.083   19.15 | 2.083   17.50 |  3.08    9.65
               0.167    7.31 | 1.167   19.15 | 2.167   17.50 |  3.17    9.65
               0.250    8.00 | 1.250   35.20 | 2.250   15.16 |  3.25    9.17
               0.333    8.00 | 1.333   35.20 | 2.333   15.16 |  3.33    9.17
               0.417    8.53 | 1.417  106.93 | 2.417   13.48 |  3.42    8.69
               0.500    8.53 | 1.500  106.93 | 2.500   13.48 |  3.50    8.69
               0.583    9.78 | 1.583   43.31 | 2.583   12.22 |  3.58    8.26
               0.667    9.78 | 1.667   43.31 | 2.667   12.22 |  3.67    8.26
               0.750   11.03 | 1.750   27.46 | 2.750   11.23 |  3.75    7.87
               0.833   11.03 | 1.833   27.46 | 2.833   11.23 |  3.83    7.87
               0.917   14.20 | 1.917   21.08 | 2.917   10.41 |  3.92    7.54
               1.000   14.20 | 2.000   21.08 | 3.000   10.41 |  4.00    7.54

     Max.Eff.Inten.(mm/hr)=     106.93         52.32
```

over (min)	5.00	20.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.23	0.48	1.355 (iii)
TIME TO PEAK (hrs)=	1.50	2.00	1.50
RUNOFF VOLUME (mm)=	72.36	31.46	43.73
TOTAL RAINFALL (mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT =	0.98	0.43	0.59

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.(mm/hr)=	106.93	48.83	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.96	0.18	1.035 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	72.36	30.69	51.94
TOTAL RAINFALL (mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT =	0.98	0.42	0.70

***** 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.(mm/hr)=		106.93	63.61	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.73	0.19	0.817 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	72.36	33.67	51.47
TOTAL RAINFALL	(mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT	=	0.98	0.46	0.70

***** 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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.	(mm/hr)=	106.93	52.32	
	over (min)	5.00	15.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.66	0.25	0.728 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	72.36	31.46	43.73
TOTAL RAINFALL	(mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT	=	0.98	0.43	0.59

***** 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 (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):		7.92	0.728	1.50	43.73
+ ID2= 2 (0203):		5.73	0.817	1.50	51.47
ID = 3 (0001):		13.65	1.544	1.50	46.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
       ID1= 1 (  0001):    13.65   1.544     1.50    46.98
     + ID2= 2 (  0204):     6.75   1.035     1.50    51.94
       ==========================================================
       ID = 3 (  0002):    20.40   2.579     1.50    48.62

     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 (  0002):    20.40   2.579     1.50    48.62
     + ID2= 2 (  0205):    15.87   1.355     1.50    43.73
       ==========================================================
       ID = 3 (  0003):    36.27   3.934     1.50    46.48

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52          5.99
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     251.79         40.00
     Mannings n             =     0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    7.31 | 1.083   19.15 | 2.083   17.50 |  3.08    9.65
              0.167    7.31 | 1.167   19.15 | 2.167   17.50 |  3.17    9.65
              0.250    8.00 | 1.250   35.20 | 2.250   15.16 |  3.25    9.17
              0.333    8.00 | 1.333   35.20 | 2.333   15.16 |  3.33    9.17
              0.417    8.53 | 1.417  106.93 | 2.417   13.48 |  3.42    8.69
              0.500    8.53 | 1.500  106.93 | 2.500   13.48 |  3.50    8.69
              0.583    9.78 | 1.583   43.31 | 2.583   12.22 |  3.58    8.26
              0.667    9.78 | 1.667   43.31 | 2.667   12.22 |  3.67    8.26
              0.750   11.03 | 1.750   27.46 | 2.750   11.23 |  3.75    7.87
              0.833   11.03 | 1.833   27.46 | 2.833   11.23 |  3.83    7.87
              0.917   14.20 | 1.917   21.08 | 2.917   10.41 |  3.92    7.54
              1.000   14.20 | 2.000   21.08 | 3.000   10.41 |  4.00    7.54

     Max.Eff.Inten.(mm/hr)=     106.93         28.30
               over (min)         5.00         20.00
     Storage Coeff.  (min)=       4.33 (ii)    16.02 (ii)
     Unit Hyd. Tpeak (min)=       5.00         20.00
     Unit Hyd. peak  (cms)=       0.23          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.97          0.29        1.094 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.75         1.50
     RUNOFF VOLUME    (mm)=      72.86         26.68        43.77
     TOTAL RAINFALL   (mm)=      73.86         73.86        73.86
     RUNOFF COEFFICIENT   =       0.99          0.36         0.59

***** 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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   1.094     1.50    43.77
      + ID2= 2 (  0003):    36.27   3.934     1.50    46.48
        ================================================
        ID = 3 (  0004):    45.78   5.028     1.50    45.92

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   5.028     1.50    45.92
      + ID2= 2 (  0006):    61.02   4.352     1.50    35.05
        ================================================
        ID = 3 (  0007):   106.80   9.381     1.50    39.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000   |   0.1460      3.8400
                       0.0630     0.0000   |   0.1580      4.8470
                       0.0830     0.5050   |   0.1690      5.8850
                       0.1020     1.2290   |   0.3480      6.9520
                       0.1070     1.4240   |   0.8370      8.0490
                       0.1190     2.0370   |  10.8540      9.1760
                       0.1330     2.9100   |  19.0030      9.7510
                       0.1430     3.5940   |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      9.381      1.50       39.71
   OUTFLOW: ID= 1 (  0050)    106.802      0.148      5.17       39.71

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.58
                  TIME SHIFT OF PEAK FLOW         (min)=220.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  4.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.569 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 18.757
TOTAL RAINFALL (mm)= 73.860
RUNOFF COEFFICIENT = 0.254

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.569	3.17	18.76
	+ ID2= 2 (0050):	106.80	0.148	5.17	39.71
	ID = 3 (0008):	141.40	0.708	3.25	34.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.572 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 21.107
TOTAL RAINFALL (mm)= 73.860
RUNOFF COEFFICIENT = 0.286

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

| CALIB | STANDHYD (0208) | ID= 1 DT= 5.0 min |

Area (ha)= 8.27
Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	7.31	1.083	19.15	2.083	17.50	3.08	9.65
0.167	7.31	1.167	19.15	2.167	17.50	3.17	9.65
0.250	8.00	1.250	35.20	2.250	15.16	3.25	9.17
0.333	8.00	1.333	35.20	2.333	15.16	3.33	9.17
0.417	8.53	1.417	106.93	2.417	13.48	3.42	8.69
0.500	8.53	1.500	106.93	2.500	13.48	3.50	8.69
0.583	9.78	1.583	43.31	2.583	12.22	3.58	8.26
0.667	9.78	1.667	43.31	2.667	12.22	3.67	8.26
0.750	11.03	1.750	27.46	2.750	11.23	3.75	7.87
0.833	11.03	1.833	27.46	2.833	11.23	3.83	7.87
0.917	14.20	1.917	21.08	2.917	10.41	3.92	7.54
1.000	14.20	2.000	21.08	3.000	10.41	4.00	7.54

Max.Eff.Inten.(mm/hr)=		106.93	53.05	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.22	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.92	0.27	1.037 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	72.36	31.61	48.32
TOTAL RAINFALL	(mm)=	73.86	73.86	73.86
RUNOFF COEFFICIENT	=	0.98	0.43	0.65

***** 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(  0051)|     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   |   1.2500      0.2000
                          0.2500     0.1000   |   2.5000      0.3000
                          0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      1.037      1.50      48.32
   OUTFLOW: ID= 1 (  0051)      8.270      0.446      2.00      48.31

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 42.96
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1281

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


--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.572     1.83    21.11
      + ID2= 2 (  0051):     8.27   0.446     2.00    48.31
        ==========================================================
        ID = 3 (  0009):    23.57   0.993     1.92    30.65

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.708     3.25    34.59
      + ID2= 2 (  0009):    23.57   0.993     1.92    30.65
        ==========================================================
        ID = 3 (  0010):   164.97   1.345     2.08    34.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\2e6b24d3-d143-4423-a125-38a02bc8f1f3\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\2e6b24d3-d143-4423-a125-38a02bc8f1f3\scena


DATE: 03-02-2023                              TIME: 02:03:54

USER:



COMMENTS: _____________________________________________________________


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  **********************************************
  ** SIMULATION : Run 04                       **
  **********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\8bf8da11
| Ptotal= 82.85 mm |    Comments: B-chi25
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    7.40 |  1.00   20.00 |  2.00   21.60 |  3.00   10.00
                0.17    8.10 |  1.17   42.90 |  2.17   18.80 |  3.17    9.25
                0.33    8.60 |  1.33  118.90 |  2.33   15.00 |  3.33    8.50
                0.50    9.90 |  1.50   52.65 |  2.50   13.10 |  3.50    8.31
                0.67   11.50 |  1.67   33.10 |  2.67   12.00 |  3.67    8.20
                0.83   14.80 |  1.83   26.00 |  2.83   10.50 |  3.83    8.00

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
```

|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.570 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 20.599
TOTAL RAINFALL (mm)= 82.852
RUNOFF COEFFICIENT = 0.249

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.(mm/hr)=	118.90	59.25	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	3.29	1.31	3.822 (iii)
TIME TO PEAK (hrs)=	1.50	1.83	1.50
RUNOFF VOLUME (mm)=	81.35	37.20	53.54
TOTAL RAINFALL (mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT =	0.98	0.45	0.65

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		24.80	0.570	2.58	20.60
+ ID2= 2 (0201):		31.64	3.822	1.50	53.54
ID = 3 (0005):		56.44	3.881	1.50	39.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209)	Area (ha)= 4.58		
ID= 1 DT= 5.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.11	1.47	
Dep. Storage (mm)=	1.50	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	174.74	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.(mm/hr)=	118.90	40.35

```
              over (min)        5.00         10.00
     Storage Coeff.  (min)=     3.60 (ii)    16.20 (ii)
     Unit Hyd. Tpeak (min)=     5.00         15.00
     Unit Hyd. peak  (cms)=     0.26          0.07
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.99          0.09        1.034 (iii)
     TIME TO PEAK    (hrs)=     1.50          1.75         1.50
     RUNOFF VOLUME    (mm)=    81.35         32.46        65.70
     TOTAL RAINFALL   (mm)=    82.85         82.85        82.85
     RUNOFF COEFFICIENT   =     0.98          0.39         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.

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| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0209):     4.58    1.034     1.50    65.70
      + ID2= 2 (  0005):    56.44    3.881     1.50    39.06
        ==========================================================
        ID = 3 (  0006):    61.02    4.915     1.50    41.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0205)|   Area    (ha)=  15.87
|ID= 1 DT= 5.0 min |   Total Imp(%)=  45.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.14          8.73
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     325.27         40.00
     Mannings n             =     0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.40 | 1.083   20.00 | 2.083   21.60 |  3.08   10.00
               0.167    7.40 | 1.167   20.00 | 2.167   21.60 |  3.17   10.00
               0.250    8.10 | 1.250   42.90 | 2.250   18.80 |  3.25    9.25
               0.333    8.10 | 1.333   42.90 | 2.333   18.80 |  3.33    9.25
               0.417    8.60 | 1.417  118.90 | 2.417   15.00 |  3.42    8.50
               0.500    8.60 | 1.500  118.90 | 2.500   15.00 |  3.50    8.50
               0.583    9.90 | 1.583   52.65 | 2.583   13.10 |  3.58    8.31
               0.667    9.90 | 1.667   52.65 | 2.667   13.10 |  3.67    8.31
               0.750   11.50 | 1.750   33.10 | 2.750   12.00 |  3.75    8.20
               0.833   11.50 | 1.833   33.10 | 2.833   12.00 |  3.83    8.20
               0.917   14.80 | 1.917   26.00 | 2.917   10.50 |  3.92    8.00
               1.000   14.80 | 2.000   26.00 | 3.000   10.50 |  4.00    8.00

     Max.Eff.Inten.(mm/hr)=     118.90        62.45
```

over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.37	0.60	1.525 (iii)
TIME TO PEAK (hrs)=	1.50	2.08	1.50
RUNOFF VOLUME (mm)=	81.35	37.88	50.92
TOTAL RAINFALL (mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT =	0.98	0.46	0.61

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.(mm/hr)=	118.90	58.37	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	1.07	0.22	1.161 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	81.35	37.01	59.62
TOTAL RAINFALL (mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT =	0.98	0.45	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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.(mm/hr)=		118.90	75.60	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.82	0.23	0.918 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	81.35	40.36	59.21
TOTAL RAINFALL	(mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT	=	0.98	0.49	0.71

***** 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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.	(mm/hr)=	118.90	62.45	
	over (min)	5.00	15.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.74	0.31	0.817 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	81.35	37.88	50.92
TOTAL RAINFALL	(mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT	=	0.98	0.46	0.61

***** 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 (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0202):	7.92	0.817	1.50	50.92
	+ ID2= 2 (0203):	5.73	0.918	1.50	59.21
	ID = 3 (0001):	13.65	1.735	1.50	54.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

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       ID1= 1 (  0001):    13.65   1.735     1.50    54.40
     + ID2= 2 (  0204):     6.75   1.161     1.50    59.62
       ==================================================
       ID = 3 (  0002):    20.40   2.896     1.50    56.13

     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 (  0002):    20.40   2.896     1.50    56.13
     + ID2= 2 (  0205):    15.87   1.525     1.50    50.92
       ==================================================
       ID = 3 (  0003):    36.27   4.421     1.50    53.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52         5.99
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     251.79        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    7.40 | 1.083   20.00 | 2.083   21.60 |  3.08   10.00
              0.167    7.40 | 1.167   20.00 | 2.167   21.60 |  3.17   10.00
              0.250    8.10 | 1.250   42.90 | 2.250   18.80 |  3.25    9.25
              0.333    8.10 | 1.333   42.90 | 2.333   18.80 |  3.33    9.25
              0.417    8.60 | 1.417  118.90 | 2.417   15.00 |  3.42    8.50
              0.500    8.60 | 1.500  118.90 | 2.500   15.00 |  3.50    8.50
              0.583    9.90 | 1.583   52.65 | 2.583   13.10 |  3.58    8.31
              0.667    9.90 | 1.667   52.65 | 2.667   13.10 |  3.67    8.31
              0.750   11.50 | 1.750   33.10 | 2.750   12.00 |  3.75    8.20
              0.833   11.50 | 1.833   33.10 | 2.833   12.00 |  3.83    8.20
              0.917   14.80 | 1.917   26.00 | 2.917   10.50 |  3.92    8.00
              1.000   14.80 | 2.000   26.00 | 3.000   10.50 |  4.00    8.00

     Max.Eff.Inten.(mm/hr)=     118.90        34.75
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       4.15 (ii)   14.92 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.24         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.09         0.38      1.297 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.67       1.50
     RUNOFF VOLUME    (mm)=      81.85        32.46      50.74
     TOTAL RAINFALL   (mm)=      82.85        82.85      82.85
     RUNOFF COEFFICIENT   =       0.99         0.39       0.61

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

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0206):     9.51   1.297     1.50    50.74
     + ID2= 2 (  0003):    36.27   4.421     1.50    53.85
       ================================================
       ID = 3 (  0004):    45.78   5.718     1.50    53.20

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0004):    45.78   5.718     1.50    53.20
     + ID2= 2 (  0006):    61.02   4.915     1.50    41.06
       ================================================
       ID = 3 (  0007):   106.80  10.633     1.50    46.27

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
    **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000   |   0.1460      3.8400
                       0.0630     0.0000   |   0.1580      4.8470
                       0.0830     0.5050   |   0.1690      5.8850
                       0.1020     1.2290   |   0.3480      6.9520
                       0.1070     1.4240   |   0.8370      8.0490
                       0.1190     2.0370   |  10.8540      9.1760
                       0.1330     2.9100   |  19.0030      9.7510
                       0.1430     3.5940   |   0.0000      0.0000

                            AREA     QPEAK     TPEAK       R.V.
                            (ha)     (cms)     (hrs)       (mm)
  INFLOW : ID= 2 (  0007)  106.802    10.633      1.50      46.27
  OUTFLOW: ID= 1 (  0050)  106.802     0.156      5.25      46.27

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.47
                TIME SHIFT OF PEAK FLOW         (min)=225.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  4.6874

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--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.729 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 23.152
TOTAL RAINFALL (mm)= 82.852
RUNOFF COEFFICIENT = 0.279

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

ADD HYD (0008)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0207):	34.60	0.729	3.17	23.15
+ ID2= 2 (0050):	106.80	0.156	5.25	46.27
ID = 3 (0008):	141.40	0.875	3.17	40.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0102)
ID= 1 DT= 5.0 min

Area (ha)= 15.30 Curve Number (CN)= 62.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.28

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.726 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 25.940
TOTAL RAINFALL (mm)= 82.852
RUNOFF COEFFICIENT = 0.313

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

| CALIB | STANDHYD (0208) | ID= 1 DT= 5.0 min |

Area (ha)= 8.27
Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	7.40	1.083	20.00	2.083	21.60	3.08	10.00
0.167	7.40	1.167	20.00	2.167	21.60	3.17	10.00
0.250	8.10	1.250	42.90	2.250	18.80	3.25	9.25
0.333	8.10	1.333	42.90	2.333	18.80	3.33	9.25
0.417	8.60	1.417	118.90	2.417	15.00	3.42	8.50
0.500	8.60	1.500	118.90	2.500	15.00	3.50	8.50
0.583	9.90	1.583	52.65	2.583	13.10	3.58	8.31
0.667	9.90	1.667	52.65	2.667	13.10	3.67	8.31
0.750	11.50	1.750	33.10	2.750	12.00	3.75	8.20
0.833	11.50	1.833	33.10	2.833	12.00	3.83	8.20
0.917	14.80	1.917	26.00	2.917	10.50	3.92	8.00
1.000	14.80	2.000	26.00	3.000	10.50	4.00	8.00

Max.Eff.Inten.(mm/hr)=		118.90	63.30	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.22	0.06	
				TOTALS
PEAK FLOW	(cms)=	1.03	0.34	1.169 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	81.35	38.05	55.80
TOTAL RAINFALL	(mm)=	82.85	82.85	82.85
RUNOFF COEFFICIENT	=	0.98	0.46	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.

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--------------------
| RESERVOIR(  0051)|     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   |   1.2500      0.2000
                          0.2500     0.1000   |   2.5000      0.3000
                          0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      1.169      1.50      55.80
   OUTFLOW: ID= 1 (  0051)      8.270      0.555      2.00      55.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 47.51
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1437

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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.726     1.83    25.94
      + ID2= 2 (  0051):     8.27   0.555     2.00    55.79
        ==========================================================
        ID = 3 (  0009):    23.57   1.257     1.92    36.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.875     3.17    40.61
      + ID2= 2 (  0009):    23.57   1.257     1.92    36.41
        ==========================================================
        ID = 3 (  0010):   164.97   1.685     2.08    40.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\bfbb3315-99a0-4cca-8dd3-43a0637df31c\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\bfbb3315-99a0-4cca-8dd3-43a0637df31c\scena


DATE: 03-02-2023                          TIME: 02:03:56

USER:



COMMENTS: _____________________________________________________________


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  **********************************************
  ** SIMULATION : Run 05                      **
  **********************************************


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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\885b919f
| Ptotal= 85.51 mm |    Comments: B-chi50
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    7.50 |  1.00   21.56 |  2.00   20.35 |  3.00    9.70
                0.17    8.30 |  1.17   44.50 |  2.17   17.31 |  3.17    9.04
                0.33    8.66 |  1.33  132.00 |  2.33   14.20 |  3.33    8.48
                0.50   10.00 |  1.50   56.39 |  2.50   13.65 |  3.50    8.00
                0.67   11.91 |  1.67   33.12 |  2.67   11.45 |  3.67    7.57
                0.83   15.11 |  1.83   26.58 |  2.83   10.49 |  3.83    7.19

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
```

|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
---------- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.621 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 21.833
TOTAL RAINFALL (mm)= 85.510
RUNOFF COEFFICIENT = 0.255

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.(mm/hr)=	132.00		68.65	
over (min)	5.00		15.00	
Storage Coeff. (min)=	6.60	(ii)	19.80	(ii)
Unit Hyd. Tpeak (min)=	5.00		20.00	
Unit Hyd. peak (cms)=	0.18		0.06	
				TOTALS
PEAK FLOW (cms)=	3.63		1.47	4.234 (iii)
TIME TO PEAK (hrs)=	1.50		1.75	1.50
RUNOFF VOLUME (mm)=	84.01		39.13	55.74
TOTAL RAINFALL (mm)=	85.51		85.51	85.51
RUNOFF COEFFICIENT =	0.98		0.46	0.65

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		24.80	0.621	2.58	21.83
+ ID2= 2 (0201):		31.64	4.234	1.50	55.74
ID = 3 (0005):		56.44	4.300	1.50	40.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209) ID= 1 DT= 5.0 min	Area (ha)= 4.58			
	Total Imp(%)= 68.00		Dir. Conn.(%)= 68.00	
		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.11	1.47	
Dep. Storage	(mm)=	1.50	5.00	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	174.74	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.(mm/hr)=	132.00	47.02

```
              over (min)        5.00         10.00
     Storage Coeff.  (min)=     3.60 (ii)    16.20 (ii)
     Unit Hyd. Tpeak (min)=     5.00         15.00
     Unit Hyd. peak  (cms)=     0.26          0.07
                                                      *TOTALS*
     PEAK FLOW       (cms)=     1.09          0.10       1.148 (iii)
     TIME TO PEAK    (hrs)=     1.50          1.67        1.50
     RUNOFF VOLUME    (mm)=    84.01         34.23       68.08
     TOTAL RAINFALL   (mm)=    85.51         85.51       85.51
     RUNOFF COEFFICIENT   =     0.98          0.40        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.

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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0209):     4.58    1.148     1.50    68.08
      + ID2= 2 (  0005):    56.44    4.300     1.50    40.84
        ==========================================================
        ID = 3 (  0006):    61.02    5.448     1.50    42.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0205)|   Area    (ha)=  15.87
|ID= 1 DT= 5.0 min |   Total Imp(%)=  45.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.14          8.73
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     325.27         40.00
     Mannings n             =     0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.50 | 1.083   21.56 | 2.083   20.35 |  3.08    9.70
               0.167    7.50 | 1.167   21.56 | 2.167   20.35 |  3.17    9.70
               0.250    8.30 | 1.250   44.50 | 2.250   17.31 |  3.25    9.04
               0.333    8.30 | 1.333   44.50 | 2.333   17.31 |  3.33    9.04
               0.417    8.66 | 1.417  132.00 | 2.417   14.20 |  3.42    8.48
               0.500    8.66 | 1.500  132.00 | 2.500   14.20 |  3.50    8.48
               0.583   10.00 | 1.583   56.39 | 2.583   13.65 |  3.58    8.00
               0.667   10.00 | 1.667   56.39 | 2.667   13.65 |  3.67    8.00
               0.750   11.91 | 1.750   33.12 | 2.750   11.45 |  3.75    7.57
               0.833   11.91 | 1.833   33.12 | 2.833   11.45 |  3.83    7.57
               0.917   15.11 | 1.917   26.58 | 2.917   10.49 |  3.92    7.19
               1.000   15.11 | 2.000   26.58 | 3.000   10.49 |  4.00    7.19

     Max.Eff.Inten.(mm/hr)=     132.00        72.30
```

over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.52	0.67	1.688 (iii)
TIME TO PEAK (hrs)=	1.50	2.00	1.50
RUNOFF VOLUME (mm)=	84.01	39.83	53.08
TOTAL RAINFALL (mm)=	85.51	85.51	85.51
RUNOFF COEFFICIENT =	0.98	0.47	0.62

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.(mm/hr)=	132.00	67.65	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	1.18	0.26	1.288 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	84.01	38.94	61.92
TOTAL RAINFALL (mm)=	85.51	85.51	85.51
RUNOFF COEFFICIENT =	0.98	0.46	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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.(mm/hr)=		132.00	87.29	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.91	0.26	1.019 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	84.01	42.39	61.53
TOTAL RAINFALL	(mm)=	85.51	85.51	85.51
RUNOFF COEFFICIENT	=	0.98	0.50	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.	(mm/hr)=	132.00	72.30	
	over (min)	5.00	15.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.82	0.35	0.906 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	84.01	39.83	53.08
TOTAL RAINFALL	(mm)=	85.51	85.51	85.51
RUNOFF COEFFICIENT	=	0.98	0.47	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 (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):		7.92	0.906	1.50	53.08
+ ID2= 2 (0203):		5.73	1.019	1.50	61.53
ID = 3 (0001):		13.65	1.924	1.50	56.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
       ID1= 1 (  0001):    13.65   1.924     1.50    56.63
     + ID2= 2 (  0204):     6.75   1.288     1.50    61.92
       ================================================
       ID = 3 (  0002):    20.40   3.213     1.50    58.38

     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 (  0002):    20.40   3.213     1.50    58.38
     + ID2= 2 (  0205):    15.87   1.688     1.50    53.08
       ================================================
       ID = 3 (  0003):    36.27   4.901     1.50    56.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52          5.99
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     251.79         40.00
     Mannings n           =      0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    7.50 | 1.083   21.56 | 2.083   20.35 |  3.08    9.70
              0.167    7.50 | 1.167   21.56 | 2.167   20.35 |  3.17    9.70
              0.250    8.30 | 1.250   44.50 | 2.250   17.31 |  3.25    9.04
              0.333    8.30 | 1.333   44.50 | 2.333   17.31 |  3.33    9.04
              0.417    8.66 | 1.417  132.00 | 2.417   14.20 |  3.42    8.48
              0.500    8.66 | 1.500  132.00 | 2.500   14.20 |  3.50    8.48
              0.583   10.00 | 1.583   56.39 | 2.583   13.65 |  3.58    8.00
              0.667   10.00 | 1.667   56.39 | 2.667   13.65 |  3.67    8.00
              0.750   11.91 | 1.750   33.12 | 2.750   11.45 |  3.75    7.57
              0.833   11.91 | 1.833   33.12 | 2.833   11.45 |  3.83    7.57
              0.917   15.11 | 1.917   26.58 | 2.917   10.49 |  3.92    7.19
              1.000   15.11 | 2.000   26.58 | 3.000   10.49 |  4.00    7.19

     Max.Eff.Inten.(mm/hr)=     132.00        47.02
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       3.98 (ii)   13.52 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.24         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.22         0.46       1.464 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.67        1.50
     RUNOFF VOLUME    (mm)=      84.51        34.23       52.83
     TOTAL RAINFALL   (mm)=      85.51        85.51       85.51
     RUNOFF COEFFICIENT   =       0.99         0.40        0.62

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

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   1.464     1.50    52.83
      + ID2= 2 (  0003):    36.27   4.901     1.50    56.06
        ================================================
        ID = 3 (  0004):    45.78   6.365     1.50    55.39

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   6.365     1.50    55.39
      + ID2= 2 (  0006):    61.02   5.448     1.50    42.88
        ================================================
        ID = 3 (  0007):   106.80  11.813     1.50    48.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000   |   0.1460      3.8400
                       0.0630     0.0000   |   0.1580      4.8470
                       0.0830     0.5050   |   0.1690      5.8850
                       0.1020     1.2290   |   0.3480      6.9520
                       0.1070     1.4240   |   0.8370      8.0490
                       0.1190     2.0370   |  10.8540      9.1760
                       0.1330     2.9100   |  19.0030      9.7510
                       0.1430     3.5940   |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802     11.813      1.50      48.24
   OUTFLOW: ID= 1 (  0050)    106.802      0.159      5.25      48.25

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.34
                  TIME SHIFT OF PEAK FLOW         (min)=225.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  4.8957

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--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.784 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 24.511
TOTAL RAINFALL (mm)= 85.510
RUNOFF COEFFICIENT = 0.287

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

ADD HYD (0008)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0207):	34.60	0.784	3.08	24.51
+ ID2= 2 (0050):	106.80	0.159	5.25	48.25
ID = 3 (0008):	141.40	0.932	3.08	42.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min

Area (ha)= 15.30 Curve Number (CN)= 62.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.28

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.824 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 27.430
TOTAL RAINFALL (mm)= 85.510
RUNOFF COEFFICIENT = 0.321

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	7.50	1.083	21.56	2.083	20.35	3.08	9.70
0.167	7.50	1.167	21.56	2.167	20.35	3.17	9.70
0.250	8.30	1.250	44.50	2.250	17.31	3.25	9.04
0.333	8.30	1.333	44.50	2.333	17.31	3.33	9.04
0.417	8.66	1.417	132.00	2.417	14.20	3.42	8.48
0.500	8.66	1.500	132.00	2.500	14.20	3.50	8.48
0.583	10.00	1.583	56.39	2.583	13.65	3.58	8.00
0.667	10.00	1.667	56.39	2.667	13.65	3.67	8.00
0.750	11.91	1.750	33.12	2.750	11.45	3.75	7.57
0.833	11.91	1.833	33.12	2.833	11.45	3.83	7.57
0.917	15.11	1.917	26.58	2.917	10.49	3.92	7.19
1.000	15.11	2.000	26.58	3.000	10.49	4.00	7.19

Max.Eff.Inten.(mm/hr)=		132.00	73.28	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.22	0.06	
				TOTALS
PEAK FLOW	(cms)=	1.14	0.38	1.296 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	84.01	40.01	58.05
TOTAL RAINFALL	(mm)=	85.51	85.51	85.51
RUNOFF COEFFICIENT	=	0.98	0.47	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.

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--------------------
| RESERVOIR(  0051)|     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   |   1.2500      0.2000
                          0.2500     0.1000   |   2.5000      0.3000
                          0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      1.296      1.50       58.05
   OUTFLOW: ID= 1 (  0051)      8.270      0.618      2.00       58.04

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 47.65
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1516

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


--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.824     1.83    27.43
      + ID2= 2 (  0051):     8.27   0.618     2.00    58.04
        ==========================================================
        ID = 3 (  0009):    23.57   1.413     1.83    38.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.932     3.08    42.44
      + ID2= 2 (  0009):    23.57   1.413     1.83    38.17
        ==========================================================
        ID = 3 (  0010):   164.97   1.859     2.00    41.83

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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COMMENTS: _____________________________________________________________________

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  ** SIMULATION : Run 06                        **
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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\cc591a0d
| Ptotal= 95.00 mm |    Comments: B-chi100
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    7.64 |  1.00   24.46 |  2.00   21.89 |  3.00   10.74
                0.17    8.48 |  1.17   51.21 |  2.17   18.36 |  3.17   10.00
                0.33    9.58 |  1.33  146.83 |  2.33   15.93 |  3.33    9.37
                0.50   11.07 |  1.50   65.00 |  2.50   14.15 |  3.50    8.81
                0.67   13.31 |  1.67   38.00 |  2.67   12.75 |  3.67    8.33
                0.83   16.97 |  1.83   27.53 |  2.83   11.66 |  3.83    7.92

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
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|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.761 (i)
TIME TO PEAK (hrs)= 2.500
RUNOFF VOLUME (mm)= 26.437
TOTAL RAINFALL (mm)= 94.998
RUNOFF COEFFICIENT = 0.278

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Max.Eff.Inten.(mm/hr)=	146.83	82.70	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	4.05	1.79	4.795 (iii)
TIME TO PEAK (hrs)=	1.50	1.83	1.50
RUNOFF VOLUME (mm)=	93.50	46.19	63.70
TOTAL RAINFALL (mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT =	0.98	0.49	0.67

(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 (0005)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	24.80	0.761	2.50	26.44
+ ID2= 2 (0201):	31.64	4.795	1.50	63.70
ID = 3 (0005):	56.44	4.880	1.50	47.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0209)
ID= 1 DT= 5.0 min

Area (ha)= 4.58
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.11	1.47
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	174.74	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Max.Eff.Inten.(mm/hr)=	146.83	57.22

```
              over (min)        5.00         10.00
     Storage Coeff.  (min)=     3.60 (ii)    16.20 (ii)
     Unit Hyd. Tpeak (min)=     5.00         15.00
     Unit Hyd. peak  (cms)=     0.26          0.07
                                                      *TOTALS*
     PEAK FLOW       (cms)=     1.22          0.13       1.285 (iii)
     TIME TO PEAK    (hrs)=     1.50          1.67        1.50
     RUNOFF VOLUME    (mm)=    93.50         40.73       76.61
     TOTAL RAINFALL   (mm)=    95.00         95.00       95.00
     RUNOFF COEFFICIENT   =     0.98          0.43        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.

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| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0209):     4.58    1.285     1.50    76.61
      + ID2= 2 (  0005):    56.44    4.880     1.50    47.32
        ==========================================================
        ID = 3 (  0006):    61.02    6.165     1.50    49.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0205)|   Area    (ha)=  15.87
|ID= 1 DT= 5.0 min |   Total Imp(%)=  45.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.14          8.73
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     325.27         40.00
     Mannings n             =     0.013         0.250

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


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.64 | 1.083   24.46 | 2.083   21.89 |  3.08   10.74
               0.167    7.64 | 1.167   24.46 | 2.167   21.89 |  3.17   10.74
               0.250    8.48 | 1.250   51.21 | 2.250   18.36 |  3.25   10.00
               0.333    8.48 | 1.333   51.21 | 2.333   18.36 |  3.33   10.00
               0.417    9.58 | 1.417  146.83 | 2.417   15.93 |  3.42    9.37
               0.500    9.58 | 1.500  146.83 | 2.500   15.93 |  3.50    9.37
               0.583   11.07 | 1.583   65.00 | 2.583   14.15 |  3.58    8.81
               0.667   11.07 | 1.667   65.00 | 2.667   14.15 |  3.67    8.81
               0.750   13.31 | 1.750   38.00 | 2.750   12.75 |  3.75    8.33
               0.833   13.31 | 1.833   38.00 | 2.833   12.75 |  3.83    8.33
               0.917   16.97 | 1.917   27.53 | 2.917   11.66 |  3.92    7.92
               1.000   16.97 | 2.000   27.53 | 3.000   11.66 |  4.00    7.92

     Max.Eff.Inten.(mm/hr)=     146.83         86.98
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over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.69	0.82	1.903 (iii)
TIME TO PEAK (hrs)=	1.50	2.00	1.50
RUNOFF VOLUME (mm)=	93.50	46.96	60.92
TOTAL RAINFALL (mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT =	0.98	0.49	0.64

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Max.Eff.Inten.(mm/hr)=	146.83	81.53	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	1.32	0.31	1.448 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	93.50	45.98	70.21
TOTAL RAINFALL (mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Max.Eff.Inten.(mm/hr)=		146.83	104.49	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	1.01	0.32	1.147 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	93.50	49.79	69.89
TOTAL RAINFALL	(mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT	=	0.98	0.52	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Max.Eff.Inten.	(mm/hr)=	146.83	86.98	
	over (min)	5.00	15.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.91	0.42	1.020 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	93.50	46.96	60.92
TOTAL RAINFALL	(mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT	=	0.98	0.49	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.

ADD HYD (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	7.92	1.020	1.50	60.92
	+ ID2= 2 (0203):	5.73	1.147	1.50	69.89
	ID = 3 (0001):	13.65	2.167	1.50	64.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)

```
       ID1= 1 (  0001):    13.65   2.167     1.50    64.69
     + ID2= 2 (  0204):     6.75   1.448     1.50    70.21
       ================================================
       ID = 3 (  0002):    20.40   3.615     1.50    66.52

     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 (  0002):    20.40   3.615     1.50    66.52
     + ID2= 2 (  0205):    15.87   1.903     1.50    60.92
       ================================================
       ID = 3 (  0003):    36.27   5.518     1.50    64.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52         5.99
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     251.79        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    7.64 | 1.083   24.46 | 2.083   21.89 |  3.08   10.74
              0.167    7.64 | 1.167   24.46 | 2.167   21.89 |  3.17   10.74
              0.250    8.48 | 1.250   51.21 | 2.250   18.36 |  3.25   10.00
              0.333    8.48 | 1.333   51.21 | 2.333   18.36 |  3.33   10.00
              0.417    9.58 | 1.417  146.83 | 2.417   15.93 |  3.42    9.37
              0.500    9.58 | 1.500  146.83 | 2.500   15.93 |  3.50    9.37
              0.583   11.07 | 1.583   65.00 | 2.583   14.15 |  3.58    8.81
              0.667   11.07 | 1.667   65.00 | 2.667   14.15 |  3.67    8.81
              0.750   13.31 | 1.750   38.00 | 2.750   12.75 |  3.75    8.33
              0.833   13.31 | 1.833   38.00 | 2.833   12.75 |  3.83    8.33
              0.917   16.97 | 1.917   27.53 | 2.917   11.66 |  3.92    7.92
              1.000   16.97 | 2.000   27.53 | 3.000   11.66 |  4.00    7.92

     Max.Eff.Inten.(mm/hr)=     146.83        57.22
               over (min)          5.00        15.00
     Storage Coeff.  (min)=       3.81 (ii)   12.64 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.25         0.08
                                                        *TOTALS*
     PEAK FLOW       (cms)=       1.37         0.58       1.682 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.67        1.50
     RUNOFF VOLUME    (mm)=      94.00        40.73       60.44
     TOTAL RAINFALL   (mm)=      95.00        95.00       95.00
     RUNOFF COEFFICIENT   =       0.99         0.43        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.

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

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   1.682     1.50    60.44
      + ID2= 2 (  0003):    36.27   5.518     1.50    64.07
        ================================================
        ID = 3 (  0004):    45.78   7.200     1.50    63.31

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

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   7.200     1.50    63.31
      + ID2= 2 (  0006):    61.02   6.165     1.50    49.52
        ================================================
        ID = 3 (  0007):   106.80  13.365     1.50    55.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000   |   0.1460      3.8400
                       0.0630     0.0000   |   0.1580      4.8470
                       0.0830     0.5050   |   0.1690      5.8850
                       0.1020     1.2290   |   0.3480      6.9520
                       0.1070     1.4240   |   0.8370      8.0490
                       0.1190     2.0370   |  10.8540      9.1760
                       0.1330     2.9100   |  19.0030      9.7510
                       0.1430     3.5940   |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802     13.365      1.50      55.43
   OUTFLOW: ID= 1 (  0050)    106.802      0.166      5.25      55.44

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.25
                  TIME SHIFT OF PEAK FLOW         (min)=225.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  5.6487

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.950 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 29.568
TOTAL RAINFALL (mm)= 94.998
RUNOFF COEFFICIENT = 0.311

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.950	3.08	29.57
	+ ID2= 2 (0050):	106.80	0.166	5.25	55.44
	ID = 3 (0008):	141.40	1.105	3.08	49.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 1.025 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 32.952
TOTAL RAINFALL (mm)= 94.998
RUNOFF COEFFICIENT = 0.347

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

| CALIB | STANDHYD (0208) | ID= 1 DT= 5.0 min |

Area (ha)= 8.27
Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	7.64	1.083	24.46	2.083	21.89	3.08	10.74
0.167	7.64	1.167	24.46	2.167	21.89	3.17	10.74
0.250	8.48	1.250	51.21	2.250	18.36	3.25	10.00
0.333	8.48	1.333	51.21	2.333	18.36	3.33	10.00
0.417	9.58	1.417	146.83	2.417	15.93	3.42	9.37
0.500	9.58	1.500	146.83	2.500	15.93	3.50	9.37
0.583	11.07	1.583	65.00	2.583	14.15	3.58	8.81
0.667	11.07	1.667	65.00	2.667	14.15	3.67	8.81
0.750	13.31	1.750	38.00	2.750	12.75	3.75	8.33
0.833	13.31	1.833	38.00	2.833	12.75	3.83	8.33
0.917	16.97	1.917	27.53	2.917	11.66	3.92	7.92
1.000	16.97	2.000	27.53	3.000	11.66	4.00	7.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		146.83	88.12	
over (min)		5.00	15.00	
Storage Coeff. (min)=		4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.22	0.06	
PEAK FLOW	(cms)=	1.27	0.46	1.463 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	93.50	47.16	66.16
TOTAL RAINFALL	(mm)=	95.00	95.00	95.00
RUNOFF COEFFICIENT	=	0.98	0.50	0.70

***** 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(  0051)|     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   |   1.2500      0.2000
                          0.2500     0.1000   |   2.5000      0.3000
                          0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)      8.270      1.463      1.50      66.16
   OUTFLOW: ID= 1 (  0051)      8.270      0.787      1.92      66.15

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 53.77
                  TIME SHIFT OF PEAK FLOW         (min)= 25.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1649

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


--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   1.025     1.83    32.95
      + ID2= 2 (  0051):     8.27   0.787     1.92    66.15
        ==========================================================
        ID = 3 (  0009):    23.57   1.802     1.83    44.60

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   1.105     3.08    49.11
      + ID2= 2 (  0009):    23.57   1.802     1.83    44.60
        ==========================================================
        ID = 3 (  0010):   164.97   2.283     1.92    48.46

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

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\14060fce-eb45-424c-a71b-fe9b1c28215d\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\14060fce-eb45-424c-a71b-fe9b1c28215d\scena


DATE: 03-02-2023                              TIME: 02:03:53

USER:



COMMENTS: _____________________________________________________________________

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  ************************************************
  ** SIMULATION : Run 07                        **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\78d841d5
| Ptotal= 46.11 mm |    Comments: B-scs2
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.46 |  6.00    0.92 | 12.00    9.18 | 18.00    0.92
                0.20    0.46 |  6.20    0.92 | 12.20    5.74 | 18.20    0.92
                0.40    0.46 |  6.40    0.92 | 12.40    4.13 | 18.40    0.92
                0.60    0.46 |  6.60    0.92 | 12.60    3.90 | 18.60    0.92
                0.80    0.46 |  6.80    0.92 | 12.80    2.75 | 18.80    0.92
                1.00    0.46 |  7.00    0.92 | 13.00    2.30 | 19.00    0.69
                1.20    0.46 |  7.20    0.92 | 13.20    2.30 | 19.20    0.69
                1.40    0.46 |  7.40    0.92 | 13.40    2.30 | 19.40    0.69
                1.60    0.46 |  7.60    0.92 | 13.60    2.30 | 19.60    0.69
                1.80    0.46 |  7.80    0.92 | 13.80    2.30 | 19.80    0.69
                2.00    0.46 |  8.00    1.38 | 14.00    1.38 | 20.00    0.69
                2.20    0.46 |  8.20    1.38 | 14.20    1.38 | 20.20    0.69
```

2.40	0.46	8.40	1.38	14.40	1.38	20.40	0.69
2.60	0.46	8.60	1.38	14.60	1.38	20.60	0.69
2.80	0.46	8.80	1.38	14.80	1.38	20.80	0.69
3.00	0.46	9.00	1.38	15.00	1.38	21.00	0.46
3.20	0.46	9.20	1.38	15.20	1.38	21.20	0.46
3.40	0.46	9.40	1.38	15.40	1.38	21.40	0.46
3.60	0.46	9.60	1.38	15.60	1.38	21.60	0.46
3.80	0.46	9.80	1.38	15.80	1.38	21.80	0.46
4.00	0.92	10.00	2.52	16.00	0.92	22.00	0.46
4.20	0.92	10.20	2.52	16.20	0.92	22.20	0.46
4.40	0.92	10.40	2.52	16.40	0.92	22.40	0.46
4.60	0.92	10.60	2.52	16.60	0.92	22.60	0.46
4.80	0.92	10.80	2.52	16.80	0.92	22.80	0.46
5.00	0.92	11.00	3.44	17.00	0.92	23.00	0.46
5.20	0.92	11.20	5.05	17.20	0.92	23.20	0.46
5.40	0.92	11.40	11.47	17.40	0.92	23.40	0.46
5.60	0.92	11.60	25.20	17.60	0.92	23.60	0.46
5.80	0.92	11.80	52.80	17.80	0.92	23.80	0.46

CALIB			
NASHYD (0101)	Area (ha)= 24.80	Curve Number (CN)= 54.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.75		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69

2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.149 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 6.564
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = 0.142

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

CALIB STANDHYD (0201) ID= 1 DT= 5.0 min	Area (ha)= 31.64 Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46

4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	19.80	
over (min)	5.00	25.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	1.55	0.48	1.872 (iii)
TIME TO PEAK (hrs)=	12.00	12.25	12.00
RUNOFF VOLUME (mm)=	44.61	13.59	25.07
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.97	0.29	0.54

(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 (0005)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	24.80	0.149	12.75	6.56
+ ID2= 2 (0201):	31.64	1.872	12.00	25.07
ID = 3 (0005):	56.44	1.918	12.00	16.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0209)
ID= 1 DT= 5.0 min

Area (ha)= 4.58
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.11	1.47
Dep. Storage (mm)=	1.50	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	174.74	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46

5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	11.13	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
			TOTALS
PEAK FLOW (cms)=	0.45	0.03	0.472 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	44.61	11.27	33.94
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.97	0.24	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.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	0.472	12.00	33.94
+ ID2= 2 (0005):		56.44	1.918	12.00	16.94
ID = 3 (0006):		61.02	2.391	12.00	18.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0205) | Area (ha)= 15.87
ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92

0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46

5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	20.94	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	0.64	0.21	0.744 (iii)
TIME TO PEAK (hrs)=	12.00	12.42	12.00
RUNOFF VOLUME (mm)=	44.61	13.93	23.14
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.97	0.30	0.50

(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.

CALIB			
STANDHYD (0204)	Area (ha)=	6.75	
ID= 1 DT= 5.0 min	Total Imp(%)=	60.00	Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69

1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	19.50	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.49	0.08	0.543 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	44.61	13.50	29.36
TOTAL RAINFALL (mm)=	46.11	46.11	46.11

RUNOFF COEFFICIENT = 0.97 0.29 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69

3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

			TOTALS
Max.Eff.Inten.(mm/hr)=	52.80	25.62	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
PEAK FLOW (cms)=	0.37	0.09	0.433 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	44.61	15.22	28.74
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.97	0.33	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.

CALIB		
STANDHYD (0202)	Area (ha)=	7.92
ID= 1 DT= 5.0 min	Total Imp(%)=	45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46

4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	20.94	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.34	0.11	0.389 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	44.61	13.93	23.13
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.97	0.30	0.50

***** 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 (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		7.92	0.389	12.00	23.13
+ ID2= 2 (0203):		5.73	0.433	12.00	28.74
ID = 3 (0001):		13.65	0.822	12.00	25.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		13.65	0.822	12.00	25.49
+ ID2= 2 (0204):		6.75	0.543	12.00	29.36
ID = 3 (0002):		20.40	1.365	12.00	26.77

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 (0002):	20.40	1.365	12.00	26.77
+ ID2= 2 (0205):	15.87	0.744	12.00	23.14
ID = 3 (0003):	36.27	2.109	12.00	25.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0206)	Area (ha)= 9.51
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69

2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80	11.13	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.74 (ii)	22.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.20	0.05	
			TOTALS
PEAK FLOW (cms)=	0.48	0.11	0.537 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	45.11	11.27	23.79
TOTAL RAINFALL (mm)=	46.11	46.11	46.11
RUNOFF COEFFICIENT =	0.98	0.24	0.52

(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  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   0.537    12.00    23.79
      + ID2= 2 (  0003):    36.27   2.109    12.00    25.18
        ================================================
        ID = 3 (  0004):    45.78   2.646    12.00    24.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   2.646    12.00    24.89
      + ID2= 2 (  0006):    61.02   2.391    12.00    18.21
        ================================================
        ID = 3 (  0007):   106.80   5.037    12.00    21.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                       0.0560     0.0000    |   0.1460      3.8400
                       0.0630     0.0000    |   0.1580      4.8470
                       0.0830     0.5050    |   0.1690      5.8850
                       0.1020     1.2290    |   0.3480      6.9520
                       0.1070     1.4240    |   0.8370      8.0490
                       0.1190     2.0370    |  10.8540      9.1760
                       0.1330     2.9100    |  19.0030      9.7510
                       0.1430     3.5940    |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      5.037     12.00      21.08
   OUTFLOW: ID= 1 (  0050)    106.802      0.110     21.08      21.08

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.19
                 TIME SHIFT OF PEAK FLOW         (min)=545.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  1.5965

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-------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    0.46 | 6.083    0.92 |12.083    9.18 | 18.08    0.92
             0.167    0.46 | 6.167    0.92 |12.167    9.18 | 18.17    0.92
             0.250    0.46 | 6.250    0.92 |12.250    7.12 | 18.25    0.92
             0.333    0.46 | 6.333    0.92 |12.333    5.74 | 18.33    0.92
             0.417    0.46 | 6.417    0.92 |12.417    5.42 | 18.42    0.92
```

0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46

5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.180 (i)
TIME TO PEAK (hrs)= 13.167
RUNOFF VOLUME (mm)= 7.510
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = 0.163

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.180	13.17	7.51
	+ ID2= 2 (0050):	106.80	0.110	21.08	21.08
	ID = 3 (0008):	141.40	0.283	13.17	17.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102) ID= 1 DT= 5.0 min				
	Area (ha)=	15.30	Curve Number (CN)=	62.0
	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.28		

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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69

2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46
4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.244 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 8.584
TOTAL RAINFALL (mm)= 46.112
RUNOFF COEFFICIENT = 0.186

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	0.46	6.083	0.92	12.083	9.18	18.08	0.92
0.167	0.46	6.167	0.92	12.167	9.18	18.17	0.92
0.250	0.46	6.250	0.92	12.250	7.12	18.25	0.92
0.333	0.46	6.333	0.92	12.333	5.74	18.33	0.92
0.417	0.46	6.417	0.92	12.417	5.42	18.42	0.92
0.500	0.46	6.500	0.92	12.500	4.13	18.50	0.92
0.583	0.46	6.583	0.92	12.583	4.13	18.58	0.92
0.667	0.46	6.667	0.92	12.667	3.95	18.67	0.92
0.750	0.46	6.750	0.92	12.750	3.90	18.75	0.92
0.833	0.46	6.833	0.92	12.833	3.44	18.83	0.92
0.917	0.46	6.917	0.92	12.917	2.75	18.92	0.92
1.000	0.46	7.000	0.92	13.000	2.75	19.00	0.92
1.083	0.46	7.083	0.92	13.083	2.30	19.08	0.69
1.167	0.46	7.167	0.92	13.167	2.30	19.17	0.69
1.250	0.46	7.250	0.92	13.250	2.30	19.25	0.69
1.333	0.46	7.333	0.92	13.333	2.30	19.33	0.69
1.417	0.46	7.417	0.92	13.417	2.30	19.42	0.69
1.500	0.46	7.500	0.92	13.500	2.30	19.50	0.69
1.583	0.46	7.583	0.92	13.583	2.30	19.58	0.69
1.667	0.46	7.667	0.92	13.667	2.30	19.67	0.69
1.750	0.46	7.750	0.92	13.750	2.30	19.75	0.69
1.833	0.46	7.833	0.92	13.833	2.30	19.83	0.69
1.917	0.46	7.917	0.92	13.917	2.30	19.92	0.69
2.000	0.46	8.000	0.92	14.000	2.30	20.00	0.69
2.083	0.46	8.083	1.38	14.083	1.38	20.08	0.69
2.167	0.46	8.167	1.38	14.167	1.38	20.17	0.69
2.250	0.46	8.250	1.38	14.250	1.38	20.25	0.69
2.333	0.46	8.333	1.38	14.333	1.38	20.33	0.69
2.417	0.46	8.417	1.38	14.417	1.38	20.42	0.69
2.500	0.46	8.500	1.38	14.500	1.38	20.50	0.69
2.583	0.46	8.583	1.38	14.583	1.38	20.58	0.69
2.667	0.46	8.667	1.38	14.667	1.38	20.67	0.69
2.750	0.46	8.750	1.38	14.750	1.38	20.75	0.69
2.833	0.46	8.833	1.38	14.833	1.38	20.83	0.69
2.917	0.46	8.917	1.38	14.917	1.38	20.92	0.69
3.000	0.46	9.000	1.38	15.000	1.38	21.00	0.69
3.083	0.46	9.083	1.38	15.083	1.38	21.08	0.46
3.167	0.46	9.167	1.38	15.167	1.38	21.17	0.46
3.250	0.46	9.250	1.38	15.250	1.38	21.25	0.46
3.333	0.46	9.333	1.38	15.333	1.38	21.33	0.46
3.417	0.46	9.417	1.38	15.417	1.38	21.42	0.46
3.500	0.46	9.500	1.38	15.500	1.38	21.50	0.46
3.583	0.46	9.583	1.38	15.583	1.38	21.58	0.46
3.667	0.46	9.667	1.38	15.667	1.38	21.67	0.46
3.750	0.46	9.750	1.38	15.750	1.38	21.75	0.46
3.833	0.46	9.833	1.38	15.833	1.38	21.83	0.46
3.917	0.46	9.917	1.38	15.917	1.38	21.92	0.46
4.000	0.46	10.000	1.38	16.000	1.38	22.00	0.46
4.083	0.92	10.083	2.52	16.083	0.92	22.08	0.46
4.167	0.92	10.167	2.52	16.167	0.92	22.17	0.46
4.250	0.92	10.250	2.52	16.250	0.92	22.25	0.46

4.333	0.92	10.333	2.52	16.333	0.92	22.33	0.46
4.417	0.92	10.417	2.52	16.417	0.92	22.42	0.46
4.500	0.92	10.500	2.52	16.500	0.92	22.50	0.46
4.583	0.92	10.583	2.52	16.583	0.92	22.58	0.46
4.667	0.92	10.667	2.52	16.667	0.92	22.67	0.46
4.750	0.92	10.750	2.52	16.750	0.92	22.75	0.46
4.833	0.92	10.833	2.52	16.833	0.92	22.83	0.46
4.917	0.92	10.917	2.52	16.917	0.92	22.92	0.46
5.000	0.92	11.000	2.52	17.000	0.92	23.00	0.46
5.083	0.92	11.083	3.44	17.083	0.92	23.08	0.46
5.167	0.92	11.167	3.44	17.167	0.92	23.17	0.46
5.250	0.92	11.250	4.41	17.250	0.92	23.25	0.46
5.333	0.92	11.333	5.05	17.333	0.92	23.33	0.46
5.417	0.92	11.417	6.33	17.417	0.92	23.42	0.46
5.500	0.92	11.500	11.47	17.500	0.92	23.50	0.46
5.583	0.92	11.583	11.47	17.583	0.92	23.58	0.46
5.667	0.92	11.667	22.45	17.667	0.92	23.67	0.46
5.750	0.92	11.750	25.20	17.750	0.92	23.75	0.46
5.833	0.92	11.833	36.24	17.833	0.92	23.83	0.46
5.917	0.92	11.917	52.80	17.917	0.92	23.92	0.46
6.000	0.92	12.000	52.80	18.000	0.92	24.00	0.46

Max.Eff.Inten.(mm/hr)=	52.80		21.24	
over (min)	5.00		20.00	
Storage Coeff. (min)=	4.80	(ii)	18.60	(ii)
Unit Hyd. Tpeak (min)=	5.00		20.00	
Unit Hyd. peak (cms)=	0.22		0.06	
				TOTALS
PEAK FLOW (cms)=	0.47		0.12	0.557 (iii)
TIME TO PEAK (hrs)=	12.00		12.17	12.00
RUNOFF VOLUME (mm)=	44.61		14.02	26.56
TOTAL RAINFALL (mm)=	46.11		46.11	46.11
RUNOFF COEFFICIENT =	0.97		0.30	0.58

***** 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(0051)	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	1.2500	0.2000
0.2500	0.1000	2.5000	0.3000
0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	0.557	12.00	26.56
OUTFLOW: ID= 1 (0051)	8.270	0.169	12.33	26.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 30.35
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.0677

| ADD HYD (0009)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0102):	15.30	0.244	12.17	8.58
+ ID2= 2 (0051):	8.27	0.169	12.33	26.55
ID = 3 (0009):	23.57	0.406	12.17	14.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0010)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0008):	141.40	0.283	13.17	17.76
+ ID2= 2 (0009):	23.57	0.406	12.17	14.89
ID = 3 (0010):	164.97	0.578	12.25	17.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\84d4fef2-f63a-4fcd-8028-57b499e15bba\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\84d4fef2-f63a-4fcd-8028-57b499e15bba\scena


DATE: 03-02-2023                              TIME: 02:03:55

USER:



COMMENTS: _____________________________________________________________________

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  ************************************************
  ** SIMULATION : Run 08                        **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\560a0ce3
| Ptotal= 66.81 mm |    Comments: B-scs5
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.67 |  6.00    1.33 | 12.00   13.30 | 18.00    1.33
                0.20    0.67 |  6.20    1.33 | 12.20    8.32 | 18.20    1.33
                0.40    0.67 |  6.40    1.33 | 12.40    5.98 | 18.40    1.33
                0.60    0.67 |  6.60    1.33 | 12.60    5.65 | 18.60    1.33
                0.80    0.67 |  6.80    1.33 | 12.80    3.98 | 18.80    1.33
                1.00    0.67 |  7.00    1.33 | 13.00    3.33 | 19.00    1.00
                1.20    0.67 |  7.20    1.33 | 13.20    3.33 | 19.20    1.00
                1.40    0.67 |  7.40    1.33 | 13.40    3.33 | 19.40    1.00
                1.60    0.67 |  7.60    1.33 | 13.60    3.33 | 19.60    1.00
                1.80    0.67 |  7.80    1.33 | 13.80    3.33 | 19.80    1.00
                2.00    0.67 |  8.00    2.00 | 14.00    2.00 | 20.00    1.00
                2.20    0.67 |  8.20    2.00 | 14.20    2.00 | 20.20    1.00
```

2.40	0.67	8.40	2.00	14.40	2.00	20.40	1.00
2.60	0.67	8.60	2.00	14.60	2.00	20.60	1.00
2.80	0.67	8.80	2.00	14.80	2.00	20.80	1.00
3.00	0.67	9.00	2.00	15.00	2.00	21.00	0.67
3.20	0.67	9.20	2.00	15.20	2.00	21.20	0.67
3.40	0.67	9.40	2.00	15.40	2.00	21.40	0.67
3.60	0.67	9.60	2.00	15.60	2.00	21.60	0.67
3.80	0.67	9.80	2.00	15.80	2.00	21.80	0.67
4.00	1.33	10.00	3.65	16.00	1.33	22.00	0.67
4.20	1.33	10.20	3.65	16.20	1.33	22.20	0.67
4.40	1.33	10.40	3.65	16.40	1.33	22.40	0.67
4.60	1.33	10.60	3.65	16.60	1.33	22.60	0.67
4.80	1.33	10.80	3.65	16.80	1.33	22.80	0.67
5.00	1.33	11.00	4.98	17.00	1.33	23.00	0.67
5.20	1.33	11.20	7.32	17.20	1.33	23.20	0.67
5.40	1.33	11.40	16.62	17.40	1.33	23.40	0.67
5.60	1.33	11.60	36.50	17.60	1.33	23.60	0.67
5.80	1.33	11.80	76.48	17.80	1.33	23.80	0.67

CALIB			
NASHYD (0101)	Area (ha)=	24.80	Curve Number (CN)= 54.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.75	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00

2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.318 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 13.732
TOTAL RAINFALL (mm)= 66.806
RUNOFF COEFFICIENT = 0.206

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

CALIB STANDHYD (0201) ID= 1 DT= 5.0 min	Area (ha)= 31.64 Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67

4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48	44.83	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	2.24	0.94	2.894 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	65.31	26.10	40.61
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.98	0.39	0.61

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3	ID1= 1 (0101):	24.80	0.318	12.67	13.73
	+ ID2= 2 (0201):	31.64	2.894	12.00	40.61
	ID = 3 (0005):	56.44	3.001	12.00	28.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209) | Area (ha)= 4.58
ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.11	1.47
Dep. Storage (mm)=	1.50	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	174.74	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67

5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48		26.52	
over (min)	5.00		20.00	
Storage Coeff. (min)=	3.60	(ii)	16.20	(ii)
Unit Hyd. Tpeak (min)=	5.00		15.00	
Unit Hyd. peak (cms)=	0.26		0.07	
				TOTALS
PEAK FLOW (cms)=	0.65		0.07	0.701 (iii)
TIME TO PEAK (hrs)=	12.00		12.17	12.00
RUNOFF VOLUME (mm)=	65.31		22.38	51.57
TOTAL RAINFALL (mm)=	66.81		66.81	66.81
RUNOFF COEFFICIENT =	0.98		0.34	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.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	0.701	12.00	51.57
+ ID2= 2 (0005):		56.44	3.001	12.00	28.80
ID = 3 (0006):		61.02	3.702	12.00	30.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0205)	Area (ha)= 15.87	
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00	Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33

0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67

5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48	47.13	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	0.93	0.41	1.138 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	65.31	26.64	38.24
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.98	0.40	0.57

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00

1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48	44.20	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.71	0.16	0.818 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	65.31	25.95	46.02
TOTAL RAINFALL (mm)=	66.81	66.81	66.81

RUNOFF COEFFICIENT = 0.98 0.39 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00

3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

			TOTALS
Max.Eff.Inten.(mm/hr)=	76.48	56.51	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
PEAK FLOW (cms)=	0.54	0.17	0.658 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	65.31	28.63	45.50
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.98	0.43	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67

4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

			TOTALS
Max.Eff.Inten.(mm/hr)=	76.48	47.13	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
PEAK FLOW (cms)=	0.49	0.21	0.595 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	65.31	26.64	38.24
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.98	0.40	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 (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0202):		7.92	0.595	12.00	38.24
+ ID2= 2 (0203):		5.73	0.658	12.00	45.50
ID = 3 (0001):		13.65	1.253	12.00	41.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0001):		13.65	1.253	12.00	41.29
+ ID2= 2 (0204):		6.75	0.818	12.00	46.02
ID = 3 (0002):		20.40	2.071	12.00	42.85

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 (0002):	20.40	2.071	12.00	42.85
+ ID2= 2 (0205):	15.87	1.138	12.00	38.24
ID = 3 (0003):	36.27	3.209	12.00	40.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0206)	Area (ha)= 9.51	
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00

2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48	26.52	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.95 (ii)	16.95 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	0.71	0.26	0.885 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	65.81	22.38	38.45
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.99	0.34	0.58

***** 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  (  0004)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0206):      9.51    0.885     12.00     38.45
      + ID2= 2 (  0003):     36.27    3.209     12.00     40.83
        ==========================================================
        ID = 3 (  0004):     45.78    4.094     12.00     40.34

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


--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0004):     45.78    4.094     12.00     40.34
      + ID2= 2 (  0006):     61.02    3.702     12.00     30.51
        ==========================================================
        ID = 3 (  0007):    106.80    7.796     12.00     34.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                AREA      QPEAK      TPEAK       R.V.
                                (ha)      (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      7.796      12.00       34.72
   OUTFLOW: ID= 1 (  0050)    106.802      0.133      24.00       34.72

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.70
                  TIME SHIFT OF PEAK FLOW         (min)=720.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  2.8979

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    0.67 | 6.083    1.33 |12.083   13.31 | 18.08    1.33
             0.167    0.67 | 6.167    1.33 |12.167   13.30 | 18.17    1.33
             0.250    0.67 | 6.250    1.33 |12.250   10.31 | 18.25    1.33
             0.333    0.67 | 6.333    1.33 |12.333    8.32 | 18.33    1.33
```

0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67

5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.381 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 15.545
TOTAL RAINFALL (mm)= 66.806
RUNOFF COEFFICIENT = 0.233

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.381	13.08	15.54
	+ ID2= 2 (0050):	106.80	0.133	24.00	34.72
	ID = 3 (0008):	141.40	0.501	13.08	30.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)				
ID= 1 DT= 5.0 min	Area (ha)=	15.30	Curve Number (CN)=	62.0
	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.28		

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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00

2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67
4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.510 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 17.556
TOTAL RAINFALL (mm)= 66.806
RUNOFF COEFFICIENT = 0.263

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	0.67	6.083	1.33	12.083	13.31	18.08	1.33
0.167	0.67	6.167	1.33	12.167	13.30	18.17	1.33
0.250	0.67	6.250	1.33	12.250	10.31	18.25	1.33
0.333	0.67	6.333	1.33	12.333	8.32	18.33	1.33
0.417	0.67	6.417	1.33	12.417	7.85	18.42	1.33
0.500	0.67	6.500	1.33	12.500	5.98	18.50	1.33
0.583	0.67	6.583	1.33	12.583	5.98	18.58	1.33
0.667	0.67	6.667	1.33	12.667	5.72	18.67	1.33
0.750	0.67	6.750	1.33	12.750	5.65	18.75	1.33
0.833	0.67	6.833	1.33	12.833	4.98	18.83	1.33
0.917	0.67	6.917	1.33	12.917	3.98	18.92	1.33
1.000	0.67	7.000	1.33	13.000	3.98	19.00	1.33
1.083	0.67	7.083	1.33	13.083	3.33	19.08	1.00
1.167	0.67	7.167	1.33	13.167	3.33	19.17	1.00
1.250	0.67	7.250	1.33	13.250	3.33	19.25	1.00
1.333	0.67	7.333	1.33	13.333	3.33	19.33	1.00
1.417	0.67	7.417	1.33	13.417	3.33	19.42	1.00
1.500	0.67	7.500	1.33	13.500	3.33	19.50	1.00
1.583	0.67	7.583	1.33	13.583	3.33	19.58	1.00
1.667	0.67	7.667	1.33	13.667	3.33	19.67	1.00
1.750	0.67	7.750	1.33	13.750	3.33	19.75	1.00
1.833	0.67	7.833	1.33	13.833	3.33	19.83	1.00
1.917	0.67	7.917	1.33	13.917	3.33	19.92	1.00
2.000	0.67	8.000	1.33	14.000	3.33	20.00	1.00
2.083	0.67	8.083	2.00	14.083	2.00	20.08	1.00
2.167	0.67	8.167	2.00	14.167	2.00	20.17	1.00
2.250	0.67	8.250	2.00	14.250	2.00	20.25	1.00
2.333	0.67	8.333	2.00	14.333	2.00	20.33	1.00
2.417	0.67	8.417	2.00	14.417	2.00	20.42	1.00
2.500	0.67	8.500	2.00	14.500	2.00	20.50	1.00
2.583	0.67	8.583	2.00	14.583	2.00	20.58	1.00
2.667	0.67	8.667	2.00	14.667	2.00	20.67	1.00
2.750	0.67	8.750	2.00	14.750	2.00	20.75	1.00
2.833	0.67	8.833	2.00	14.833	2.00	20.83	1.00
2.917	0.67	8.917	2.00	14.917	2.00	20.92	1.00
3.000	0.67	9.000	2.00	15.000	2.00	21.00	1.00
3.083	0.67	9.083	2.00	15.083	2.00	21.08	0.67
3.167	0.67	9.167	2.00	15.167	2.00	21.17	0.67
3.250	0.67	9.250	2.00	15.250	2.00	21.25	0.67
3.333	0.67	9.333	2.00	15.333	2.00	21.33	0.67
3.417	0.67	9.417	2.00	15.417	2.00	21.42	0.67
3.500	0.67	9.500	2.00	15.500	2.00	21.50	0.67
3.583	0.67	9.583	2.00	15.583	2.00	21.58	0.67
3.667	0.67	9.667	2.00	15.667	2.00	21.67	0.67
3.750	0.67	9.750	2.00	15.750	2.00	21.75	0.67
3.833	0.67	9.833	2.00	15.833	2.00	21.83	0.67
3.917	0.67	9.917	2.00	15.917	2.00	21.92	0.67
4.000	0.67	10.000	2.00	16.000	2.00	22.00	0.67
4.083	1.33	10.083	3.65	16.083	1.33	22.08	0.67
4.167	1.33	10.167	3.65	16.167	1.33	22.17	0.67

4.250	1.33	10.250	3.65	16.250	1.33	22.25	0.67
4.333	1.33	10.333	3.65	16.333	1.33	22.33	0.67
4.417	1.33	10.417	3.65	16.417	1.33	22.42	0.67
4.500	1.33	10.500	3.65	16.500	1.33	22.50	0.67
4.583	1.33	10.583	3.65	16.583	1.33	22.58	0.67
4.667	1.33	10.667	3.65	16.667	1.33	22.67	0.67
4.750	1.33	10.750	3.65	16.750	1.33	22.75	0.67
4.833	1.33	10.833	3.65	16.833	1.33	22.83	0.67
4.917	1.33	10.917	3.65	16.917	1.33	22.92	0.67
5.000	1.33	11.000	3.65	17.000	1.33	23.00	0.67
5.083	1.33	11.083	4.98	17.083	1.33	23.08	0.67
5.167	1.33	11.167	4.98	17.167	1.33	23.17	0.67
5.250	1.33	11.250	6.38	17.250	1.33	23.25	0.67
5.333	1.33	11.333	7.32	17.333	1.33	23.33	0.67
5.417	1.33	11.417	9.18	17.417	1.33	23.42	0.67
5.500	1.33	11.500	16.62	17.500	1.33	23.50	0.67
5.583	1.33	11.583	16.62	17.583	1.33	23.58	0.67
5.667	1.33	11.667	32.52	17.667	1.33	23.67	0.67
5.750	1.33	11.750	36.50	17.750	1.33	23.75	0.67
5.833	1.33	11.833	52.49	17.833	1.33	23.83	0.67
5.917	1.33	11.917	76.48	17.917	1.33	23.92	0.67
6.000	1.33	12.000	76.48	18.000	1.33	24.00	0.67

Max.Eff.Inten.(mm/hr)=	76.48	47.74	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	0.68	0.24	0.854 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	65.31	26.78	42.57
TOTAL RAINFALL (mm)=	66.81	66.81	66.81
RUNOFF COEFFICIENT =	0.98	0.40	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.

RESERVOIR(0051)	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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	0.854	12.00	42.57
OUTFLOW: ID= 1 (0051)	8.270	0.291	12.33	42.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.13
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1061

```
--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.510    12.17    17.56
      + ID2= 2 (  0051):     8.27   0.291    12.33    42.56
        ================================================
        ID = 3 (  0009):    23.57   0.762    12.25    26.33

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.501    13.08    30.03
      + ID2= 2 (  0009):    23.57   0.762    12.25    26.33
        ================================================
        ID = 3 (  0010):   164.97   1.061    12.25    29.50

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

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename: C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\41a04b86-e813-465e-864a-044c6d175648\scena
  Summary  filename: C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\41a04b86-e813-465e-864a-044c6d175648\scena


DATE: 03-02-2023                              TIME: 02:03:54

USER:



COMMENTS: _____________________________________________________________________


--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : Run 09                        **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\67a413bb
| Ptotal= 80.55 mm |    Comments: B-scs10
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.80 |  6.00    1.61 | 12.00   16.04 | 18.00    1.61
                0.20    0.80 |  6.20    1.61 | 12.20   10.03 | 18.20    1.61
                0.40    0.80 |  6.40    1.61 | 12.40    7.22 | 18.40    1.61
                0.60    0.80 |  6.60    1.61 | 12.60    6.81 | 18.60    1.61
                0.80    0.80 |  6.80    1.61 | 12.80    4.80 | 18.80    1.61
                1.00    0.80 |  7.00    1.61 | 13.00    4.02 | 19.00    1.20
                1.20    0.80 |  7.20    1.61 | 13.20    4.02 | 19.20    1.20
                1.40    0.80 |  7.40    1.61 | 13.40    4.02 | 19.40    1.20
                1.60    0.80 |  7.60    1.61 | 13.60    4.02 | 19.60    1.20
                1.80    0.80 |  7.80    1.61 | 13.80    4.02 | 19.80    1.20
                2.00    0.80 |  8.00    2.41 | 14.00    2.41 | 20.00    1.20
                2.20    0.80 |  8.20    2.41 | 14.20    2.41 | 20.20    1.20
```

2.40	0.80	8.40	2.41	14.40	2.41	20.40	1.20
2.60	0.80	8.60	2.41	14.60	2.41	20.60	1.20
2.80	0.80	8.80	2.41	14.80	2.41	20.80	1.20
3.00	0.80	9.00	2.41	15.00	2.41	21.00	0.80
3.20	0.80	9.20	2.41	15.20	2.41	21.20	0.80
3.40	0.80	9.40	2.41	15.40	2.41	21.40	0.80
3.60	0.80	9.60	2.41	15.60	2.41	21.60	0.80
3.80	0.80	9.80	2.41	15.80	2.41	21.80	0.80
4.00	1.61	10.00	4.40	16.00	1.61	22.00	0.80
4.20	1.61	10.20	4.40	16.20	1.61	22.20	0.80
4.40	1.61	10.40	4.40	16.40	1.61	22.40	0.80
4.60	1.61	10.60	4.40	16.60	1.61	22.60	0.80
4.80	1.61	10.80	4.40	16.80	1.61	22.80	0.80
5.00	1.61	11.00	6.01	17.00	1.61	23.00	0.80
5.20	1.61	11.20	8.82	17.20	1.61	23.20	0.80
5.40	1.61	11.40	20.04	17.40	1.61	23.40	0.80
5.60	1.61	11.60	44.11	17.60	1.61	23.60	0.80
5.80	1.61	11.80	92.23	17.80	1.61	23.80	0.80

CALIB			
NASHYD (0101)	Area (ha)= 24.80	Curve Number (CN)= 54.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.75		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20

2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.458 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 19.553
TOTAL RAINFALL (mm)= 80.552
RUNOFF COEFFICIENT = 0.243

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

CALIB
STANDHYD (0201)
ID= 1 DT= 5.0 min

Area (ha)= 31.64
Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80

4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	60.98	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	2.70	1.29	3.612 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	79.05	35.55	51.65
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.44	0.64

(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 (0005)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	24.80	0.458	12.67	19.55
+ ID2= 2 (0201):	31.64	3.612	12.00	51.65
ID = 3 (0005):	56.44	3.770	12.00	37.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0209)
ID= 1 DT= 5.0 min

Area (ha)= 4.58
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.11	1.47
Dep. Storage (mm)=	1.50	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	174.74	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80

5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

			TOTALS
Max.Eff.Inten.(mm/hr)=	92.23	43.05	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
PEAK FLOW (cms)=	0.78	0.09	0.856 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	79.05	30.95	63.66
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.38	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.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	0.856	12.00	63.66
+ ID2= 2 (0005):		56.44	3.770	12.00	37.54
ID = 3 (0006):		61.02	4.626	12.00	39.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0205) | Area (ha)= 15.87
ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61

0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80

5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	63.96	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.12	0.56	1.413 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	79.05	36.21	49.06
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.45	0.61

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20

1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	60.17	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.85	0.22	1.007 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	79.05	35.37	57.65
TOTAL RAINFALL (mm)=	80.55	80.55	80.55

RUNOFF COEFFICIENT = 0.98 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20

3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	76.06	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.65	0.23	0.814 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	79.05	38.62	57.22
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.48	0.71

***** 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.

CALIB			
STANDHYD (0202)	Area (ha)=	7.92	
ID= 1 DT= 5.0 min	Total Imp(%)=	45.00	Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80

4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	63.96	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.59	0.29	0.738 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	79.05	36.21	49.06
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.45	0.61

***** 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 (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	7.92	0.738	12.00	49.06
	+ ID2= 2 (0203):	5.73	0.814	12.00	57.22
	ID = 3 (0001):	13.65	1.552	12.00	52.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0001):	13.65	1.552	12.00	52.49
	+ ID2= 2 (0204):	6.75	1.007	12.00	57.65
	ID = 3 (0002):	20.40	2.560	12.00	54.19

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 (0002):	20.40	2.560	12.00	54.19
+ ID2= 2 (0205):	15.87	1.413	12.00	49.06
ID = 3 (0003):	36.27	3.973	12.00	51.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0206)	Area (ha)= 9.51	
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20

2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	43.05	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.59 (ii)	14.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.23	0.08	
			TOTALS
PEAK FLOW (cms)=	0.86	0.40	1.192 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	79.55	30.95	48.93
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.99	0.38	0.61

***** 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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0206):      9.51    1.192     12.00     48.93
      + ID2= 2 (  0003):     36.27    3.973     12.00     51.95
        ==========================================================
        ID = 3 (  0004):     45.78    5.165     12.00     51.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0004):     45.78    5.165     12.00     51.32
      + ID2= 2 (  0006):     61.02    4.626     12.00     39.50
        ==========================================================
        ID = 3 (  0007):    106.80    9.791     12.00     44.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                    AREA      QPEAK      TPEAK       R.V.
                                    (ha)      (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802       9.791      12.00       44.57
   OUTFLOW: ID= 1 (  0050)    106.802       0.146      24.08       44.57

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.49
                  TIME SHIFT OF PEAK FLOW         (min)=725.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  3.8715

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--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    0.80 | 6.083    1.61 |12.083   16.05 | 18.08    1.61
             0.167    0.80 | 6.167    1.61 |12.167   16.04 | 18.17    1.61
             0.250    0.80 | 6.250    1.61 |12.250   12.43 | 18.25    1.61
             0.333    0.80 | 6.333    1.61 |12.333   10.03 | 18.33    1.61
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0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80

5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.544 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 21.998
TOTAL RAINFALL (mm)= 80.552
RUNOFF COEFFICIENT = 0.273

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.544	13.08	22.00
	+ ID2= 2 (0050):	106.80	0.146	24.08	44.57
	ID = 3 (0008):	141.40	0.676	13.08	39.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20

2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80
4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.723 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 24.673
TOTAL RAINFALL (mm)= 80.552
RUNOFF COEFFICIENT = 0.306

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	0.80	6.083	1.61	12.083	16.05	18.08	1.61
0.167	0.80	6.167	1.61	12.167	16.04	18.17	1.61
0.250	0.80	6.250	1.61	12.250	12.43	18.25	1.61
0.333	0.80	6.333	1.61	12.333	10.03	18.33	1.61
0.417	0.80	6.417	1.61	12.417	9.47	18.42	1.61
0.500	0.80	6.500	1.61	12.500	7.22	18.50	1.61
0.583	0.80	6.583	1.61	12.583	7.22	18.58	1.61
0.667	0.80	6.667	1.61	12.667	6.89	18.67	1.61
0.750	0.80	6.750	1.61	12.750	6.81	18.75	1.61
0.833	0.80	6.833	1.61	12.833	6.01	18.83	1.61
0.917	0.80	6.917	1.61	12.917	4.80	18.92	1.61
1.000	0.80	7.000	1.61	13.000	4.80	19.00	1.61
1.083	0.80	7.083	1.61	13.083	4.02	19.08	1.20
1.167	0.80	7.167	1.61	13.167	4.02	19.17	1.20
1.250	0.80	7.250	1.61	13.250	4.02	19.25	1.20
1.333	0.80	7.333	1.61	13.333	4.02	19.33	1.20
1.417	0.80	7.417	1.61	13.417	4.02	19.42	1.20
1.500	0.80	7.500	1.61	13.500	4.02	19.50	1.20
1.583	0.80	7.583	1.61	13.583	4.02	19.58	1.20
1.667	0.80	7.667	1.61	13.667	4.02	19.67	1.20
1.750	0.80	7.750	1.61	13.750	4.02	19.75	1.20
1.833	0.80	7.833	1.61	13.833	4.02	19.83	1.20
1.917	0.80	7.917	1.61	13.917	4.02	19.92	1.20
2.000	0.80	8.000	1.61	14.000	4.02	20.00	1.20
2.083	0.80	8.083	2.41	14.083	2.41	20.08	1.20
2.167	0.80	8.167	2.41	14.167	2.41	20.17	1.20
2.250	0.80	8.250	2.41	14.250	2.41	20.25	1.20
2.333	0.80	8.333	2.41	14.333	2.41	20.33	1.20
2.417	0.80	8.417	2.41	14.417	2.41	20.42	1.20
2.500	0.80	8.500	2.41	14.500	2.41	20.50	1.20
2.583	0.80	8.583	2.41	14.583	2.41	20.58	1.20
2.667	0.80	8.667	2.41	14.667	2.41	20.67	1.20
2.750	0.80	8.750	2.41	14.750	2.41	20.75	1.20
2.833	0.80	8.833	2.41	14.833	2.41	20.83	1.20
2.917	0.80	8.917	2.41	14.917	2.41	20.92	1.20
3.000	0.80	9.000	2.41	15.000	2.41	21.00	1.20
3.083	0.80	9.083	2.41	15.083	2.41	21.08	0.80
3.167	0.80	9.167	2.41	15.167	2.41	21.17	0.80
3.250	0.80	9.250	2.41	15.250	2.41	21.25	0.80
3.333	0.80	9.333	2.41	15.333	2.41	21.33	0.80
3.417	0.80	9.417	2.41	15.417	2.41	21.42	0.80
3.500	0.80	9.500	2.41	15.500	2.41	21.50	0.80
3.583	0.80	9.583	2.41	15.583	2.41	21.58	0.80
3.667	0.80	9.667	2.41	15.667	2.41	21.67	0.80
3.750	0.80	9.750	2.41	15.750	2.41	21.75	0.80
3.833	0.80	9.833	2.41	15.833	2.41	21.83	0.80
3.917	0.80	9.917	2.41	15.917	2.41	21.92	0.80
4.000	0.80	10.000	2.41	16.000	2.41	22.00	0.80
4.083	1.61	10.083	4.40	16.083	1.61	22.08	0.80
4.167	1.61	10.167	4.40	16.167	1.61	22.17	0.80

4.250	1.61	10.250	4.40	16.250	1.61	22.25	0.80
4.333	1.61	10.333	4.40	16.333	1.61	22.33	0.80
4.417	1.61	10.417	4.40	16.417	1.61	22.42	0.80
4.500	1.61	10.500	4.40	16.500	1.61	22.50	0.80
4.583	1.61	10.583	4.40	16.583	1.61	22.58	0.80
4.667	1.61	10.667	4.40	16.667	1.61	22.67	0.80
4.750	1.61	10.750	4.40	16.750	1.61	22.75	0.80
4.833	1.61	10.833	4.40	16.833	1.61	22.83	0.80
4.917	1.61	10.917	4.40	16.917	1.61	22.92	0.80
5.000	1.61	11.000	4.40	17.000	1.61	23.00	0.80
5.083	1.61	11.083	6.01	17.083	1.61	23.08	0.80
5.167	1.61	11.167	6.01	17.167	1.61	23.17	0.80
5.250	1.61	11.250	7.70	17.250	1.61	23.25	0.80
5.333	1.61	11.333	8.82	17.333	1.61	23.33	0.80
5.417	1.61	11.417	11.06	17.417	1.61	23.42	0.80
5.500	1.61	11.500	20.04	17.500	1.61	23.50	0.80
5.583	1.61	11.583	20.04	17.583	1.61	23.58	0.80
5.667	1.61	11.667	39.29	17.667	1.61	23.67	0.80
5.750	1.61	11.750	44.11	17.750	1.61	23.75	0.80
5.833	1.61	11.833	63.35	17.833	1.61	23.83	0.80
5.917	1.61	11.917	92.23	17.917	1.61	23.92	0.80
6.000	1.61	12.000	92.23	18.000	1.61	24.00	0.80

Max.Eff.Inten.(mm/hr)=	92.23	64.75	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	0.83	0.33	1.061 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	79.05	36.38	53.87
TOTAL RAINFALL (mm)=	80.55	80.55	80.55
RUNOFF COEFFICIENT =	0.98	0.45	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.

RESERVOIR(0051)	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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	1.061	12.00	53.87
OUTFLOW: ID= 1 (0051)	8.270	0.430	12.33	53.86

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.56
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1263

```
--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.723    12.17    24.67
      + ID2= 2 (  0051):     8.27   0.430    12.33    53.86
        ==================================================
        ID = 3 (  0009):    23.57   1.127    12.17    34.91

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.676    13.08    39.05
      + ID2= 2 (  0009):    23.57   1.127    12.17    34.91
        ==================================================
        ID = 3 (  0010):   164.97   1.503    12.25    38.46

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\1e046283-741c-4b51-9488-b6135f095ea8\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\1e046283-741c-4b51-9488-b6135f095ea8\scena


DATE: 03-02-2023                          TIME: 02:03:54

USER:



COMMENTS: _____________________________________________________________________

--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : Run 10                        **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\15fe8641
| Ptotal= 95.55 mm |    Comments: B-scs25
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.97 |  6.00    1.95 | 12.00   19.48 | 18.00    1.95
                0.20    0.97 |  6.20    1.95 | 12.20   12.18 | 18.20    1.95
                0.40    0.97 |  6.40    1.95 | 12.40    8.76 | 18.40    1.95
                0.60    0.97 |  6.60    1.95 | 12.60    8.28 | 18.60    1.95
                0.80    0.97 |  6.80    1.95 | 12.80    5.83 | 18.80    1.95
                1.00    0.97 |  7.00    1.95 | 13.00    4.88 | 19.00    1.46
                1.20    0.97 |  7.20    1.95 | 13.20    4.88 | 19.20    1.46
                1.40    0.97 |  7.40    1.95 | 13.40    4.88 | 19.40    1.46
                1.60    0.97 |  7.60    1.95 | 13.60    4.88 | 19.60    1.46
                1.80    0.97 |  7.80    1.95 | 13.80    4.88 | 19.80    1.46
                2.00    0.97 |  8.00    2.93 | 14.00    2.92 | 20.00    1.46
                2.20    0.97 |  8.20    2.93 | 14.20    2.92 | 20.20    1.46
```

2.40	0.97	8.40	2.93	14.40	2.92	20.40	1.46
2.60	0.97	8.60	2.93	14.60	2.92	20.60	1.46
2.80	0.97	8.80	2.93	14.80	2.92	20.80	1.46
3.00	0.97	9.00	2.93	15.00	2.92	21.00	0.97
3.20	0.97	9.20	2.93	15.20	2.92	21.20	0.97
3.40	0.97	9.40	2.93	15.40	2.92	21.40	0.97
3.60	0.97	9.60	2.93	15.60	2.92	21.60	0.97
3.80	0.97	9.80	2.93	15.80	2.92	21.80	0.97
4.00	1.95	10.00	5.35	16.00	1.95	22.00	0.97
4.20	1.95	10.20	5.35	16.20	1.95	22.20	0.97
4.40	1.95	10.40	5.35	16.40	1.95	22.40	0.97
4.60	1.95	10.60	5.35	16.60	1.95	22.60	0.97
4.80	1.95	10.80	5.35	16.80	1.95	22.80	0.97
5.00	1.95	11.00	7.30	17.00	1.95	23.00	0.97
5.20	1.95	11.20	10.72	17.20	1.95	23.20	0.97
5.40	1.95	11.40	24.35	17.40	1.95	23.40	0.97
5.60	1.95	11.60	53.57	17.60	1.95	23.60	0.97
5.80	1.95	11.80	100.81	17.80	1.95	23.80	0.97

CALIB			
NASHYD (0101)	Area (ha)=	24.80	Curve Number (CN)= 54.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.75	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46

2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.614 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 26.713
TOTAL RAINFALL (mm)= 95.546
RUNOFF COEFFICIENT = 0.280

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

CALIB STANDHYD (0201) ID= 1 DT= 5.0 min	Area (ha)= 31.64 Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97

4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	73.50	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	2.98	1.63	4.174 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	94.04	46.61	64.16
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.49	0.67

(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 (0005)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	24.80	0.614	12.67	26.71
+ ID2= 2 (0201):	31.64	4.174	12.00	64.16
ID = 3 (0005):	56.44	4.400	12.00	47.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0209)
ID= 1 DT= 5.0 min

Area (ha)= 4.58
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.11	1.47
Dep. Storage (mm)=	1.50	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	174.74	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97

5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	52.64	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
			TOTALS
PEAK FLOW (cms)=	0.85	0.12	0.954 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	94.05	41.12	77.11
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.43	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 (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	0.954	12.00	77.11
+ ID2= 2 (0005):		56.44	4.400	12.00	47.71
ID = 3 (0006):		61.02	5.354	12.00	49.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0205)	Area (ha)= 15.87		
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00	Dir. Conn.(%)= 30.00	
		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95

0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97

5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	76.94	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.23	0.72	1.625 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	94.05	47.38	61.38
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.50	0.64

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46

1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	72.56	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.93	0.28	1.139 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	94.05	46.39	70.69
TOTAL RAINFALL (mm)=	95.55	95.55	95.55

RUNOFF COEFFICIENT = 0.98 0.49 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46

3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	90.84	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.71	0.29	0.926 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	94.05	50.22	70.38
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.53	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.

CALIB			
STANDHYD (0202)	Area (ha)=	7.92	
ID= 1 DT= 5.0 min	Total Imp(%)=	45.00	Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97

4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	76.94	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.64	0.37	0.846 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	94.05	47.38	61.38
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.50	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.

ADD HYD (0001)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):	7.92	0.846	12.00	61.38
+ ID2= 2 (0203):	5.73	0.926	12.00	70.38
ID = 3 (0001):	13.65	1.772	12.00	65.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	13.65	1.772	12.00	65.16
+ ID2= 2 (0204):	6.75	1.139	12.00	70.69
ID = 3 (0002):	20.40	2.910	12.00	66.99

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 (0002):	20.40	2.910	12.00	66.99
+ ID2= 2 (0205):	15.87	1.625	12.00	61.38
ID = 3 (0003):	36.27	4.536	12.00	64.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0206)	Area (ha)= 9.51
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46

2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	52.64	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.43 (ii)	13.55 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.23	0.08	
			TOTALS
PEAK FLOW (cms)=	0.95	0.52	1.393 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	94.55	41.12	60.88
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.99	0.43	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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0206):      9.51    1.393     12.00     60.88
      + ID2= 2 (  0003):     36.27    4.536     12.00     64.54
        ==========================================================
        ID = 3 (  0004):     45.78    5.929     12.00     63.78

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


--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0004):     45.78    5.929     12.00     63.78
      + ID2= 2 (  0006):     61.02    5.354     12.00     49.91
        ==========================================================
        ID = 3 (  0007):    106.80   11.283     12.00     55.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                    AREA      QPEAK      TPEAK       R.V.
                                    (ha)      (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      11.283      12.00       55.86
   OUTFLOW: ID= 1 (  0050)    106.802       0.160      24.08       55.86

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.41
                  TIME SHIFT OF PEAK FLOW         (min)=725.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  5.0006

------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    0.97 | 6.083    1.95 |12.083   19.49 | 18.08    1.95
             0.167    0.97 | 6.167    1.95 |12.167   19.48 | 18.17    1.95
             0.250    0.97 | 6.250    1.95 |12.250   15.10 | 18.25    1.95
             0.333    0.97 | 6.333    1.95 |12.333   12.18 | 18.33    1.95
```

0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97

5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.729 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 29.870
TOTAL RAINFALL (mm)= 95.546
RUNOFF COEFFICIENT = 0.313

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.729	13.08	29.87
	+ ID2= 2 (0050):	106.80	0.160	24.08	55.86
	ID = 3 (0008):	141.40	0.871	13.08	49.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46

2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97
4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 0.939 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 33.280
TOTAL RAINFALL (mm)= 95.546
RUNOFF COEFFICIENT = 0.348

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	0.97	6.083	1.95	12.083	19.49	18.08	1.95
0.167	0.97	6.167	1.95	12.167	19.48	18.17	1.95
0.250	0.97	6.250	1.95	12.250	15.10	18.25	1.95
0.333	0.97	6.333	1.95	12.333	12.18	18.33	1.95
0.417	0.97	6.417	1.95	12.417	11.50	18.42	1.95
0.500	0.97	6.500	1.95	12.500	8.76	18.50	1.95
0.583	0.97	6.583	1.95	12.583	8.76	18.58	1.95
0.667	0.97	6.667	1.95	12.667	8.38	18.67	1.95
0.750	0.97	6.750	1.95	12.750	8.28	18.75	1.95
0.833	0.97	6.833	1.95	12.833	7.30	18.83	1.95
0.917	0.97	6.917	1.95	12.917	5.83	18.92	1.95
1.000	0.97	7.000	1.95	13.000	5.83	19.00	1.95
1.083	0.97	7.083	1.95	13.083	4.88	19.08	1.46
1.167	0.97	7.167	1.95	13.167	4.88	19.17	1.46
1.250	0.97	7.250	1.95	13.250	4.88	19.25	1.46
1.333	0.97	7.333	1.95	13.333	4.88	19.33	1.46
1.417	0.97	7.417	1.95	13.417	4.88	19.42	1.46
1.500	0.97	7.500	1.95	13.500	4.88	19.50	1.46
1.583	0.97	7.583	1.95	13.583	4.88	19.58	1.46
1.667	0.97	7.667	1.95	13.667	4.88	19.67	1.46
1.750	0.97	7.750	1.95	13.750	4.88	19.75	1.46
1.833	0.97	7.833	1.95	13.833	4.88	19.83	1.46
1.917	0.97	7.917	1.95	13.917	4.88	19.92	1.46
2.000	0.97	8.000	1.95	14.000	4.88	20.00	1.46
2.083	0.97	8.083	2.93	14.083	2.92	20.08	1.46
2.167	0.97	8.167	2.93	14.167	2.92	20.17	1.46
2.250	0.97	8.250	2.93	14.250	2.92	20.25	1.46
2.333	0.97	8.333	2.93	14.333	2.92	20.33	1.46
2.417	0.97	8.417	2.93	14.417	2.92	20.42	1.46
2.500	0.97	8.500	2.93	14.500	2.92	20.50	1.46
2.583	0.97	8.583	2.93	14.583	2.92	20.58	1.46
2.667	0.97	8.667	2.93	14.667	2.92	20.67	1.46
2.750	0.97	8.750	2.93	14.750	2.92	20.75	1.46
2.833	0.97	8.833	2.93	14.833	2.92	20.83	1.46
2.917	0.97	8.917	2.93	14.917	2.92	20.92	1.46
3.000	0.97	9.000	2.93	15.000	2.92	21.00	1.46
3.083	0.97	9.083	2.93	15.083	2.92	21.08	0.97
3.167	0.97	9.167	2.93	15.167	2.92	21.17	0.97
3.250	0.97	9.250	2.93	15.250	2.92	21.25	0.97
3.333	0.97	9.333	2.93	15.333	2.92	21.33	0.97
3.417	0.97	9.417	2.93	15.417	2.92	21.42	0.97
3.500	0.97	9.500	2.93	15.500	2.92	21.50	0.97
3.583	0.97	9.583	2.93	15.583	2.92	21.58	0.97
3.667	0.97	9.667	2.93	15.667	2.92	21.67	0.97
3.750	0.97	9.750	2.93	15.750	2.92	21.75	0.97
3.833	0.97	9.833	2.93	15.833	2.92	21.83	0.97
3.917	0.97	9.917	2.93	15.917	2.92	21.92	0.97
4.000	0.97	10.000	2.93	16.000	2.92	22.00	0.97
4.083	1.95	10.083	5.35	16.083	1.95	22.08	0.97
4.167	1.95	10.167	5.35	16.167	1.95	22.17	0.97

4.250	1.95	10.250	5.35	16.250	1.95	22.25	0.97
4.333	1.95	10.333	5.35	16.333	1.95	22.33	0.97
4.417	1.95	10.417	5.35	16.417	1.95	22.42	0.97
4.500	1.95	10.500	5.35	16.500	1.95	22.50	0.97
4.583	1.95	10.583	5.35	16.583	1.95	22.58	0.97
4.667	1.95	10.667	5.35	16.667	1.95	22.67	0.97
4.750	1.95	10.750	5.35	16.750	1.95	22.75	0.97
4.833	1.95	10.833	5.35	16.833	1.95	22.83	0.97
4.917	1.95	10.917	5.35	16.917	1.95	22.92	0.97
5.000	1.95	11.000	5.35	17.000	1.95	23.00	0.97
5.083	1.95	11.083	7.30	17.083	1.95	23.08	0.97
5.167	1.95	11.167	7.30	17.167	1.95	23.17	0.97
5.250	1.95	11.250	9.35	17.250	1.95	23.25	0.97
5.333	1.95	11.333	10.72	17.333	1.95	23.33	0.97
5.417	1.95	11.417	13.44	17.417	1.95	23.42	0.97
5.500	1.95	11.500	24.35	17.500	1.95	23.50	0.97
5.583	1.95	11.583	24.35	17.583	1.95	23.58	0.97
5.667	1.95	11.667	47.72	17.667	1.95	23.67	0.97
5.750	1.95	11.750	53.57	17.750	1.95	23.75	0.97
5.833	1.95	11.833	72.46	17.833	1.95	23.83	0.97
5.917	1.95	11.917	100.81	17.917	1.95	23.92	0.97
6.000	1.95	12.000	100.81	18.000	1.95	24.00	0.97

Max.Eff.Inten.(mm/hr)=	100.81	77.85	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	0.91	0.42	1.214 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	94.05	47.58	66.63
TOTAL RAINFALL (mm)=	95.55	95.55	95.55
RUNOFF COEFFICIENT =	0.98	0.50	0.70

***** 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(0051)	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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	1.214	12.00	66.63
OUTFLOW: ID= 1 (0051)	8.270	0.558	12.25	66.62

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.96
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1446

ADD HYD (0009)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0102):	15.30	0.939	12.17	33.28
+ ID2= 2 (0051):	8.27	0.558	12.25	66.62
ID = 3 (0009):	23.57	1.477	12.17	44.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0010)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0008):	141.40	0.871	13.08	49.50
+ ID2= 2 (0009):	23.57	1.477	12.17	44.98
ID = 3 (0010):	164.97	1.948	12.25	48.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\666c8860-9de4-473c-8e30-ff0edbbc8e1e\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\666c8860-9de4-473c-8e30-ff0edbbc8e1e\scena


DATE: 03-02-2023                              TIME: 02:03:55

USER:



COMMENTS: _____________________________________________________________________

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  ************************************************
  ** SIMULATION : Run 11                        **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\2922578e
| Ptotal=108.06 mm |    Comments: B-scs50
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    1.10 |  6.00    2.20 | 12.00   22.04 | 18.00    2.20
                0.20    1.10 |  6.20    2.20 | 12.20   13.78 | 18.20    2.20
                0.40    1.10 |  6.40    2.20 | 12.40    9.92 | 18.40    2.20
                0.60    1.10 |  6.60    2.20 | 12.60    9.37 | 18.60    2.20
                0.80    1.10 |  6.80    2.20 | 12.80    6.61 | 18.80    2.20
                1.00    1.10 |  7.00    2.20 | 13.00    5.51 | 19.00    1.65
                1.20    1.10 |  7.20    2.20 | 13.20    5.51 | 19.20    1.65
                1.40    1.10 |  7.40    2.20 | 13.40    5.51 | 19.40    1.65
                1.60    1.10 |  7.60    2.20 | 13.60    5.51 | 19.60    1.65
                1.80    1.10 |  7.80    2.20 | 13.80    5.51 | 19.80    1.65
                2.00    1.10 |  8.00    3.31 | 14.00    3.31 | 20.00    1.65
                2.20    1.10 |  8.20    3.31 | 14.20    3.31 | 20.20    1.65
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2.40	1.10	8.40	3.31	14.40	3.31	20.40	1.65
2.60	1.10	8.60	3.31	14.60	3.31	20.60	1.65
2.80	1.10	8.80	3.31	14.80	3.31	20.80	1.65
3.00	1.10	9.00	3.31	15.00	3.31	21.00	1.10
3.20	1.10	9.20	3.31	15.20	3.31	21.20	1.10
3.40	1.10	9.40	3.31	15.40	3.31	21.40	1.10
3.60	1.10	9.60	3.31	15.60	3.31	21.60	1.10
3.80	1.10	9.80	3.31	15.80	3.31	21.80	1.10
4.00	2.20	10.00	6.05	16.00	2.20	22.00	1.10
4.20	2.20	10.20	6.05	16.20	2.20	22.20	1.10
4.40	2.20	10.40	6.05	16.40	2.20	22.40	1.10
4.60	2.20	10.60	6.05	16.60	2.20	22.60	1.10
4.80	2.20	10.80	6.05	16.80	2.20	22.80	1.10
5.00	2.20	11.00	8.26	17.00	2.20	23.00	1.10
5.20	2.20	11.20	12.12	17.20	2.20	23.20	1.10
5.40	2.20	11.40	27.55	17.40	2.20	23.40	1.10
5.60	2.20	11.60	60.61	17.60	2.20	23.60	1.10
5.80	2.20	11.80	114.06	17.80	2.20	23.80	1.10

CALIB			
NASHYD (0101)	Area (ha)=	24.80	Curve Number (CN)= 54.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.75	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65

2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.770 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 33.253
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.308

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

CALIB STANDHYD (0201) ID= 1 DT= 5.0 min	Area (ha)= 31.64 Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10

4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	88.60	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	3.38	1.98	4.830 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	106.56	56.31	74.90
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.52	0.69

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3	ID1= 1 (0101):	24.80	0.770	12.67	33.25
	+ ID2= 2 (0201):	31.64	4.830	12.00	74.90
	ID = 3 (0005):	56.44	5.117	12.00	56.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209)	Area (ha)= 4.58		
ID= 1 DT= 5.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.11	1.47	
Dep. Storage (mm)=	1.50	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	174.74	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10

5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

			TOTALS
Max.Eff.Inten.(mm/hr)=	114.06	64.09	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
PEAK FLOW (cms)=	0.97	0.15	1.089 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	106.56	50.12	88.50
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.46	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.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	1.089	12.00	88.50
+ ID2= 2 (0005):		56.44	5.117	12.00	56.60
ID = 3 (0006):		61.02	6.207	12.00	59.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0205) | Area (ha)= 15.87
ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20

0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10

5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	92.63	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.40	0.87	1.875 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	106.56	57.17	71.99
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.53	0.67

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65

1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	87.50	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	1.06	0.34	1.307 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	106.56	56.07	81.82
TOTAL RAINFALL (mm)=	108.06	108.06	108.06

RUNOFF COEFFICIENT = 0.99 0.52 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65

3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	108.82	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.81	0.34	1.065 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	106.56	60.33	81.60
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.56	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.

CALIB			
STANDHYD (0202)	Area (ha)=	7.92	
ID= 1 DT= 5.0 min	Total Imp(%)=	45.00	Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10

4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	92.63	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.73	0.45	0.976 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	106.56	57.17	71.99
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.53	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 (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	7.92	0.976	12.00	71.99
	+ ID2= 2 (0203):	5.73	1.065	12.00	81.60
	ID = 3 (0001):	13.65	2.041	12.00	76.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0001):	13.65	2.041	12.00	76.02
	+ ID2= 2 (0204):	6.75	1.307	12.00	81.82
	ID = 3 (0002):	20.40	3.348	12.00	77.94

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 (0002):	20.40	3.348	12.00	77.94
+ ID2= 2 (0205):	15.87	1.875	12.00	71.99
ID = 3 (0003):	36.27	5.223	12.00	75.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (0206)	Area (ha)= 9.51
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65

2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	64.09	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.22 (ii)	12.65 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.24	0.08	
			TOTALS
PEAK FLOW (cms)=	1.08	0.66	1.642 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	107.06	50.12	71.19
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.46	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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0206):      9.51    1.642     12.00     71.19
      + ID2= 2 (  0003):     36.27    5.223     12.00     75.34
        ==========================================================
        ID = 3 (  0004):     45.78    6.866     12.00     74.48

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


--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0004):     45.78    6.866     12.00     74.48
      + ID2= 2 (  0006):     61.02    6.207     12.00     59.00
        ==========================================================
        ID = 3 (  0007):    106.80   13.072     12.00     65.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                    AREA      QPEAK      TPEAK       R.V.
                                    (ha)      (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      13.072      12.00       65.63
   OUTFLOW: ID= 1 (  0050)    106.802       0.185      24.08       65.64

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.41
                  TIME SHIFT OF PEAK FLOW         (min)=725.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  5.9781

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--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    1.10 | 6.083    2.20 |12.083   22.05 | 18.08    2.20
             0.167    1.10 | 6.167    2.20 |12.167   22.04 | 18.17    2.20
             0.250    1.10 | 6.250    2.20 |12.250   17.08 | 18.25    2.20
             0.333    1.10 | 6.333    2.20 |12.333   13.78 | 18.33    2.20
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0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10

5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.909 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 37.012
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.342

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.909	13.08	37.01
	+ ID2= 2 (0050):	106.80	0.185	24.08	65.64
	ID = 3 (0008):	141.40	1.060	13.08	58.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65

2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 1.164 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 41.032
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.380

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.08	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10
3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10

4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Max.Eff.Inten.(mm/hr)=	114.06	93.69	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	1.03	0.51	1.401 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	106.56	57.40	77.56
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.53	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(0051)	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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	1.401	12.00	77.56
OUTFLOW: ID= 1 (0051)	8.270	0.724	12.25	77.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 51.69
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1598

```
--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   1.164    12.17    41.03
      + ID2= 2 (  0051):     8.27   0.724    12.25    77.54
        ==========================================================
        ID = 3 (  0009):    23.57   1.869    12.17    53.84

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   1.060    13.08    58.63
      + ID2= 2 (  0009):    23.57   1.869    12.17    53.84
        ==========================================================
        ID = 3 (  0010):   164.97   2.430    12.25    57.95

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

```
================================================================================
==========================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\6d475fdd-e4d8-43e4-bfc4-5d5f49f29b4e\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\6d475fdd-e4d8-43e4-bfc4-5d5f49f29b4e\scena


DATE: 03-02-2023                              TIME: 02:03:55

USER:



COMMENTS: _____________________________________________________________


--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : Run 12                         **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\2b6035b8
| Ptotal=120.68 mm |    Comments: B-scs100
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    1.23 |  6.00    2.46 | 12.00   24.60 | 18.00    2.46
                0.20    1.23 |  6.20    2.46 | 12.20   15.38 | 18.20    2.46
                0.40    1.23 |  6.40    2.46 | 12.40   11.07 | 18.40    2.46
                0.60    1.23 |  6.60    2.46 | 12.60   10.46 | 18.60    2.46
                0.80    1.23 |  6.80    2.46 | 12.80    7.38 | 18.80    2.46
                1.00    1.23 |  7.00    2.46 | 13.00    6.15 | 19.00    1.84
                1.20    1.23 |  7.20    2.46 | 13.20    6.15 | 19.20    1.84
                1.40    1.23 |  7.40    2.46 | 13.40    6.15 | 19.40    1.84
                1.60    1.23 |  7.60    2.46 | 13.60    6.15 | 19.60    1.84
                1.80    1.23 |  7.80    2.46 | 13.80    6.15 | 19.80    1.84
                2.00    1.23 |  8.00    3.70 | 14.00    3.70 | 20.00    1.84
                2.20    1.23 |  8.20    3.70 | 14.20    3.70 | 20.20    1.84
```

2.40	1.23	8.40	3.70	14.40	3.70	20.40	1.84
2.60	1.23	8.60	3.70	14.60	3.70	20.60	1.84
2.80	1.23	8.80	3.70	14.80	3.70	20.80	1.84
3.00	1.23	9.00	3.70	15.00	3.70	21.00	1.23
3.20	1.23	9.20	3.70	15.20	3.70	21.20	1.23
3.40	1.23	9.40	3.70	15.40	3.70	21.40	1.23
3.60	1.23	9.60	3.70	15.60	3.70	21.60	1.23
3.80	1.23	9.80	3.70	15.80	3.70	21.80	1.23
4.00	2.46	10.00	6.75	16.00	2.46	22.00	1.23
4.20	2.46	10.20	6.75	16.20	2.46	22.20	1.23
4.40	2.46	10.40	6.75	16.40	2.46	22.40	1.23
4.60	2.46	10.60	6.75	16.60	2.46	22.60	1.23
4.80	2.46	10.80	6.75	16.80	2.46	22.80	1.23
5.00	2.46	11.00	9.22	17.00	2.46	23.00	1.23
5.20	2.46	11.20	13.53	17.20	2.46	23.20	1.23
5.40	2.46	11.40	30.75	17.40	2.46	23.40	1.23
5.60	2.46	11.60	67.65	17.60	2.46	23.60	1.23
5.80	2.46	11.80	127.30	17.80	2.46	23.80	1.23

CALIB			
NASHYD (0101)	Area (ha)=	24.80	Curve Number (CN)= 54.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.75	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84

2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.937 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 40.299
TOTAL RAINFALL (mm)= 120.678
RUNOFF COEFFICIENT = 0.334

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

CALIB
STANDHYD (0201)
ID= 1 DT= 5.0 min

Area (ha)= 31.64
Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23

4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	104.19	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	3.77	2.34	5.498 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	119.18	66.43	85.95
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.55	0.71

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3	ID1= 1 (0101):	24.80	0.937	12.67	40.30
	+ ID2= 2 (0201):	31.64	5.498	12.00	85.95
	ID = 3 (0005):	56.44	5.853	12.00	65.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209) | Area (ha)= 4.58
ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.11	1.47
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	174.74	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23

5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30		76.02	
over (min)	5.00		10.00	
Storage Coeff. (min)=	3.60	(ii)	16.20	(ii)
Unit Hyd. Tpeak (min)=	5.00		15.00	
Unit Hyd. peak (cms)=	0.26		0.07	
				TOTALS
PEAK FLOW (cms)=	1.08		0.17	1.226 (iii)
TIME TO PEAK (hrs)=	12.00		12.08	12.00
RUNOFF VOLUME (mm)=	119.18		59.60	100.11
TOTAL RAINFALL (mm)=	120.68		120.68	120.68
RUNOFF COEFFICIENT =	0.99		0.49	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.

ADD HYD (0006)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0209):	4.58	1.226	12.00	100.11
+ ID2= 2 (0005):	56.44	5.853	12.00	65.89
ID = 3 (0006):	61.02	7.079	12.00	68.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0205)
ID= 1 DT= 5.0 min

Area (ha)= 15.87
Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46

0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23

5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	108.79	
over (min)	5.00	15.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	1.56	1.03	2.130 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	119.18	67.38	82.92
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.56	0.69

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84

1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	102.93	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	1.18	0.40	1.478 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	119.18	66.17	93.20
TOTAL RAINFALL (mm)=	120.68	120.68	120.68

RUNOFF COEFFICIENT = 0.99 0.55 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84

3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	127.26	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.90	0.40	1.206 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	119.18	70.84	93.07
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.59	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23

4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	108.79	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.24	0.04	
			TOTALS
PEAK FLOW (cms)=	0.81	0.53	1.108 (iii)
TIME TO PEAK (hrs)=	12.00	12.33	12.00
RUNOFF VOLUME (mm)=	119.18	67.38	82.92
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.56	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 (0001)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0202):	7.92	1.108	12.00	82.92
	+ ID2= 2 (0203):	5.73	1.206	12.00	93.07
	ID = 3 (0001):	13.65	2.314	12.00	87.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0001):	13.65	2.314	12.00	87.18
	+ ID2= 2 (0204):	6.75	1.478	12.00	93.20
	ID = 3 (0002):	20.40	3.791	12.00	89.17

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 (0002):	20.40	3.791	12.00	89.17
+ ID2= 2 (0205):	15.87	2.130	12.00	82.92
ID = 3 (0003):	36.27	5.922	12.00	86.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0206)	Area (ha)= 9.51	
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84

2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	76.02	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.04 (ii)	11.91 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.24	0.09	
			TOTALS
PEAK FLOW (cms)=	1.21	0.80	1.900 (iii)
TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	119.68	59.60	81.83
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.49	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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0206):      9.51   1.900    12.00    81.83
     + ID2= 2 (  0003):     36.27   5.922    12.00    86.44
       ================================================
       ID = 3 (  0004):     45.78   7.822    12.00    85.48

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


--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0004):     45.78   7.822    12.00    85.48
     + ID2= 2 (  0006):     61.02   7.079    12.00    68.46
       ================================================
       ID = 3 (  0007):    106.80  14.901    12.00    75.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802     14.901     12.00      75.76
   OUTFLOW: ID= 1 (  0050)    106.802      0.306     22.33      75.13

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.05
                  TIME SHIFT OF PEAK FLOW         (min)=620.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  6.7017

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--------------------
| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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


                          ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    1.23 | 6.083    2.46 |12.083   24.61 | 18.08    2.46
             0.167    1.23 | 6.167    2.46 |12.167   24.60 | 18.17    2.46
             0.250    1.23 | 6.250    2.46 |12.250   19.07 | 18.25    2.46
             0.333    1.23 | 6.333    2.46 |12.333   15.38 | 18.33    2.46
```

0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23

5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 1.103 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 44.663
TOTAL RAINFALL (mm)= 120.678
RUNOFF COEFFICIENT = 0.370

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	1.103	13.08	44.66
	+ ID2= 2 (0050):	106.80	0.306	22.33	75.13
	ID = 3 (0008):	141.40	1.261	13.08	67.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min	Area (ha)= 15.30	Curve Number (CN)= 62.0
		Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.28	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84

2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23
4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Unit Hyd Qpeak (cms)= 2.087

PEAK FLOW (cms)= 1.403 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 49.288
TOTAL RAINFALL (mm)= 120.678
RUNOFF COEFFICIENT = 0.408

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

CALIB	
STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.47	3.80
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.23	6.083	2.46	12.083	24.61	18.08	2.46
0.167	1.23	6.167	2.46	12.167	24.60	18.17	2.46
0.250	1.23	6.250	2.46	12.250	19.07	18.25	2.46
0.333	1.23	6.333	2.46	12.333	15.38	18.33	2.46
0.417	1.23	6.417	2.46	12.417	14.52	18.42	2.46
0.500	1.23	6.500	2.46	12.500	11.07	18.50	2.46
0.583	1.23	6.583	2.46	12.583	11.07	18.58	2.46
0.667	1.23	6.667	2.46	12.667	10.58	18.67	2.46
0.750	1.23	6.750	2.46	12.750	10.46	18.75	2.46
0.833	1.23	6.833	2.46	12.833	9.23	18.83	2.46
0.917	1.23	6.917	2.46	12.917	7.38	18.92	2.46
1.000	1.23	7.000	2.46	13.000	7.38	19.00	2.46
1.083	1.23	7.083	2.46	13.083	6.15	19.08	1.84
1.167	1.23	7.167	2.46	13.167	6.15	19.17	1.84
1.250	1.23	7.250	2.46	13.250	6.15	19.25	1.84
1.333	1.23	7.333	2.46	13.333	6.15	19.33	1.84
1.417	1.23	7.417	2.46	13.417	6.15	19.42	1.84
1.500	1.23	7.500	2.46	13.500	6.15	19.50	1.84
1.583	1.23	7.583	2.46	13.583	6.15	19.58	1.84
1.667	1.23	7.667	2.46	13.667	6.15	19.67	1.84
1.750	1.23	7.750	2.46	13.750	6.15	19.75	1.84
1.833	1.23	7.833	2.46	13.833	6.15	19.83	1.84
1.917	1.23	7.917	2.46	13.917	6.15	19.92	1.84
2.000	1.23	8.000	2.46	14.000	6.15	20.00	1.84
2.083	1.23	8.083	3.70	14.083	3.70	20.08	1.84
2.167	1.23	8.167	3.70	14.167	3.70	20.17	1.84
2.250	1.23	8.250	3.70	14.250	3.70	20.25	1.84
2.333	1.23	8.333	3.70	14.333	3.70	20.33	1.84
2.417	1.23	8.417	3.70	14.417	3.70	20.42	1.84
2.500	1.23	8.500	3.70	14.500	3.70	20.50	1.84
2.583	1.23	8.583	3.70	14.583	3.70	20.58	1.84
2.667	1.23	8.667	3.70	14.667	3.70	20.67	1.84
2.750	1.23	8.750	3.70	14.750	3.70	20.75	1.84
2.833	1.23	8.833	3.70	14.833	3.70	20.83	1.84
2.917	1.23	8.917	3.70	14.917	3.70	20.92	1.84
3.000	1.23	9.000	3.70	15.000	3.70	21.00	1.84
3.083	1.23	9.083	3.70	15.083	3.70	21.08	1.23
3.167	1.23	9.167	3.70	15.167	3.70	21.17	1.23
3.250	1.23	9.250	3.70	15.250	3.70	21.25	1.23
3.333	1.23	9.333	3.70	15.333	3.70	21.33	1.23
3.417	1.23	9.417	3.70	15.417	3.70	21.42	1.23
3.500	1.23	9.500	3.70	15.500	3.70	21.50	1.23
3.583	1.23	9.583	3.70	15.583	3.70	21.58	1.23
3.667	1.23	9.667	3.70	15.667	3.70	21.67	1.23
3.750	1.23	9.750	3.70	15.750	3.70	21.75	1.23
3.833	1.23	9.833	3.70	15.833	3.70	21.83	1.23
3.917	1.23	9.917	3.70	15.917	3.70	21.92	1.23
4.000	1.23	10.000	3.70	16.000	3.70	22.00	1.23
4.083	2.46	10.083	6.75	16.083	2.46	22.08	1.23
4.167	2.46	10.167	6.75	16.167	2.46	22.17	1.23

4.250	2.46	10.250	6.75	16.250	2.46	22.25	1.23
4.333	2.46	10.333	6.75	16.333	2.46	22.33	1.23
4.417	2.46	10.417	6.75	16.417	2.46	22.42	1.23
4.500	2.46	10.500	6.75	16.500	2.46	22.50	1.23
4.583	2.46	10.583	6.75	16.583	2.46	22.58	1.23
4.667	2.46	10.667	6.75	16.667	2.46	22.67	1.23
4.750	2.46	10.750	6.75	16.750	2.46	22.75	1.23
4.833	2.46	10.833	6.75	16.833	2.46	22.83	1.23
4.917	2.46	10.917	6.75	16.917	2.46	22.92	1.23
5.000	2.46	11.000	6.75	17.000	2.46	23.00	1.23
5.083	2.46	11.083	9.22	17.083	2.46	23.08	1.23
5.167	2.46	11.167	9.22	17.167	2.46	23.17	1.23
5.250	2.46	11.250	11.81	17.250	2.46	23.25	1.23
5.333	2.46	11.333	13.53	17.333	2.46	23.33	1.23
5.417	2.46	11.417	16.97	17.417	2.46	23.42	1.23
5.500	2.46	11.500	30.75	17.500	2.46	23.50	1.23
5.583	2.46	11.583	30.75	17.583	2.46	23.58	1.23
5.667	2.46	11.667	60.27	17.667	2.46	23.67	1.23
5.750	2.46	11.750	67.65	17.750	2.46	23.75	1.23
5.833	2.46	11.833	91.50	17.833	2.46	23.83	1.23
5.917	2.46	11.917	127.30	17.917	2.46	23.92	1.23
6.000	2.46	12.000	127.30	18.000	2.46	24.00	1.23

Max.Eff.Inten.(mm/hr)=	127.30	110.00	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	1.14	0.60	1.591 (iii)
TIME TO PEAK (hrs)=	12.00	12.17	12.00
RUNOFF VOLUME (mm)=	119.18	67.63	88.76
TOTAL RAINFALL (mm)=	120.68	120.68	120.68
RUNOFF COEFFICIENT =	0.99	0.56	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(0051)	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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	1.591	12.00	88.76
OUTFLOW: ID= 1 (0051)	8.270	0.889	12.17	88.75

PEAK FLOW REDUCTION [Qout/Qin](%)= 55.86
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1730

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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   1.403    12.17    49.29
      + ID2= 2 (  0051):     8.27   0.889    12.17    88.75
        ==============================================
        ID = 3 (  0009):    23.57   2.292    12.17    63.13

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   1.261    13.08    67.68
      + ID2= 2 (  0009):    23.57   2.292    12.17    63.13
        ==============================================
        ID = 3 (  0010):   164.97   2.929    12.25    67.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\9da20a7f-53ee-4488-8e36-b409dd310d3e\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\9da20a7f-53ee-4488-8e36-b409dd310d3e\scena


DATE: 03-02-2023                          TIME: 02:03:56

USER:



COMMENTS: _____________________________________________________________________

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  ********************************************
  ** SIMULATION : Run 13                     **
  ********************************************


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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\0c481edf
| Ptotal=193.00 mm |    Comments: REGIONAL STORM TIMMINS - 12 hour storm
--------------------
                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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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.75
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME 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)= 1.263

PEAK FLOW (cms)= 1.141 (i)
TIME TO PEAK (hrs)= 7.500
RUNOFF VOLUME (mm)= 87.404
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.453

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

CALIB STANDHYD (0201) ID= 1 DT= 5.0 min	Area (ha)= 31.64 Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	42.43	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	1.40	1.74	3.134 (iii)
TIME TO PEAK (hrs)=	7.00	7.00	7.00
RUNOFF VOLUME (mm)=	191.50	128.86	152.03
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.67	0.79

(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 (0005)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	24.80	1.141	7.50	87.40
+ ID2= 2 (0201):	31.64	3.134	7.00	152.03
ID = 3 (0005):	56.44	4.099	7.00	123.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209)
ID= 1 DT= 5.0 min

Area (ha)= 4.58
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.11	1.47
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	174.74	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)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
			TOTALS
PEAK FLOW (cms)=	0.37	0.12	0.495 (iii)
TIME TO PEAK (hrs)=	6.92	7.00	7.00
RUNOFF VOLUME (mm)=	191.50	119.06	168.32
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.62	0.87

***** 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 (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3	ID1= 1 (0209):	4.58	0.495	7.00	168.32
	+ ID2= 2 (0005):	56.44	4.099	7.00	123.64
	ID = 3 (0006):	61.02	4.594	7.00	126.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0205) | Area (ha)= 15.87
ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	44.09	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	0.57	0.89	1.432 (iii)
TIME TO PEAK (hrs)=	7.00	7.17	7.00
RUNOFF VOLUME (mm)=	191.50	130.18	148.58
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.67	0.77

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.05	2.70
Dep. Storage (mm)=	1.50	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	212.13	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	41.97	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.41	0.29	0.702 (iii)
TIME TO PEAK (hrs)=	6.92	7.00	7.00
RUNOFF VOLUME (mm)=	191.50	128.48	160.62
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.67	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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	50.68	
	over (min)	5.00	15.00	
Storage Coeff.	(min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	20.00	
Unit Hyd. peak	(cms)=	0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.31	0.29	0.600 (iii)
TIME TO PEAK	(hrs)=	6.92	7.00	7.00
RUNOFF VOLUME	(mm)=	191.50	134.93	160.95
TOTAL RAINFALL	(mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT	=	0.99	0.70	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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	44.09

```
                over (min)        5.00         15.00
     Storage Coeff.  (min)=       4.20 (ii)    28.20 (ii)
     Unit Hyd. Tpeak (min)=       5.00         30.00
     Unit Hyd. peak  (cms)=       0.24          0.04
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.28          0.45          0.722 (iii)
     TIME TO PEAK    (hrs)=       6.92          7.17          7.00
     RUNOFF VOLUME    (mm)=     191.50        130.18        148.57
     TOTAL RAINFALL   (mm)=     193.00        193.00        193.00
     RUNOFF COEFFICIENT   =       0.99          0.67          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.

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


--------------------
| ADD HYD  (  0001)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0202):     7.92   0.722     7.00   148.57
      + ID2= 2 (  0203):     5.73   0.600     7.00   160.95
        ==================================================
        ID = 3 (  0001):    13.65   1.322     7.00   153.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0002)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):    13.65   1.322     7.00   153.77
      + ID2= 2 (  0204):     6.75   0.702     7.00   160.62
        ==================================================
        ID = 3 (  0002):    20.40   2.024     7.00   156.04

     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 (  0002):    20.40   2.024     7.00   156.04
      + ID2= 2 (  0205):    15.87   1.432     7.00   148.58
        ==================================================
        ID = 3 (  0003):    36.27   3.457     7.00   152.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0206)|   Area    (ha)=   9.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  37.00   Dir. Conn.(%)=  37.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.52          5.99
     Dep. Storage     (mm)=       1.00          5.00
```

Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	20.00	
Storage Coeff. (min)=	6.23 (ii)	17.38 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.19	0.06	
			TOTALS
PEAK FLOW (cms)=	0.42	0.49	0.912 (iii)
TIME TO PEAK (hrs)=	7.00	7.00	7.00
RUNOFF VOLUME (mm)=	192.00	119.06	146.05
TOTAL RAINFALL (mm)=	193.00	193.00	193.00
RUNOFF COEFFICIENT =	0.99	0.62	0.76

(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 (0004)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0206):	9.51	0.912	7.00	146.05
	+ ID2= 2 (0003):	36.27	3.457	7.00	152.77
	ID = 3 (0004):	45.78	4.369	7.00	151.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0004):	45.78	4.369	7.00	151.38
	+ ID2= 2 (0006):	61.02	4.594	7.00	126.99
	ID = 3 (0007):	106.80	8.962	7.00	137.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0050)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
**** WARNING : FIRST OUTFLOW IS NOT ZERO.				
	0.0560	0.0000	0.1460	3.8400
	0.0630	0.0000	0.1580	4.8470
	0.0830	0.5050	0.1690	5.8850
	0.1020	1.2290	0.3480	6.9520
	0.1070	1.4240	0.8370	8.0490
	0.1190	2.0370	10.8540	9.1760
	0.1330	2.9100	19.0030	9.7510
	0.1430	3.5940	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)		106.802	8.962	7.00	137.44
OUTFLOW: ID= 1 (0050)		106.802	5.457	9.00	137.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 60.88
TIME SHIFT OF PEAK FLOW (min)=120.00
MAXIMUM STORAGE USED (ha.m.)= 8.5725

CALIB			
NASHYD (0207)	Area (ha)= 34.60	Curve Number (CN)= 58.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.10		

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)= 1.201

PEAK FLOW (cms)= 1.493 (i)
TIME TO PEAK (hrs)= 8.083
RUNOFF VOLUME (mm)= 95.028
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.492

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

ADD HYD (0008)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0207):	34.60	1.493	8.08	95.03
	+ ID2= 2 (0050):	106.80	5.457	9.00	137.45
	ID = 3 (0008):	141.40	6.923	9.00	127.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)					
ID= 1 DT= 5.0 min	Area	(ha)= 15.30	Curve Number	(CN)= 62.0	
	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	

---------- U.H. Tp(hrs)= 0.28

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)= 2.087

PEAK FLOW (cms)= 1.107 (i)
TIME TO PEAK (hrs)= 7.000
RUNOFF VOLUME (mm)= 102.788
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.533

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

CALIB STANDHYD (0208)	Area (ha)= 8.27
ID= 1 DT= 5.0 min	Total Imp(%)= 54.00 Dir. Conn.(%)= 41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.47	3.80
Dep. Storage (mm)=	1.50	5.00

Average Slope	(%)=	2.00	2.00
Length	(m)=	234.80	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	44.53		
over (min)	5.00	15.00		
Storage Coeff. (min)=	4.80 (ii)	18.60 (ii)		
Unit Hyd. Tpeak (min)=	5.00	20.00		
Unit Hyd. peak (cms)=	0.22	0.06		
			TOTALS	
PEAK FLOW (cms)=	0.41	0.43	0.839 (iii)	
TIME TO PEAK (hrs)=	6.92	7.00	7.00	
RUNOFF VOLUME (mm)=	191.50	130.52	155.52	
TOTAL RAINFALL (mm)=	193.00	193.00	193.00	
RUNOFF COEFFICIENT =	0.99	0.68	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.

RESERVOIR(0051) 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	1.2500	0.2000
	0.2500	0.1000	2.5000	0.3000
	0.6000	0.1500	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0208)	8.270	0.839	7.00	155.52
OUTFLOW: ID= 1 (0051)	8.270	0.776	7.00	155.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 92.48
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.1645

ADD HYD (0009) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0102):	15.30	1.107	7.00	102.79
+ ID2= 2 (0051):	8.27	0.776	7.00	155.51
ID = 3 (0009):	23.57	1.883	7.00	121.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0010) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0008):	141.40	6.923	9.00	127.07
+ ID2= 2 (0009):	23.57	1.883	7.00	121.29
ID = 3 (0010):	164.97	8.113	9.00	126.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2012)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output   filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\9d8c8c78-0a9b-4d38-b79b-6eae5b0b1f13\scena
  Summary  filename:  C:\Users\aregmi\AppData\Local\Civica\VH5\eaaed411-b099-4108-
b6b0-cc0fca6dc942\9d8c8c78-0a9b-4d38-b79b-6eae5b0b1f13\scena


DATE: 03-02-2023                              TIME: 02:03:56

USER:



COMMENTS: _____________________________________________________________


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  **********************************************
  ** SIMULATION : Run 14                       **
  **********************************************


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|    READ STORM    |    Filename: C:\Users\aregmi\AppD
|                  |              ata\Local\Temp\
|                  |              cf9c7bfd-8cf9-4fc8-b492-3884859d410f\b4eafb5c
| Ptotal= 24.97 mm |    Comments: 25mm4hr
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    2.07 |  1.00    5.70 |  2.00    5.19 |  3.00    2.80
                0.17    2.07 |  1.17   10.78 |  2.17    4.47 |  3.17    2.62
                0.33    2.52 |  1.33   50.21 |  2.33    3.95 |  3.33    2.48
                0.50    2.88 |  1.50   13.37 |  2.50    3.56 |  3.50    2.35
                0.67    3.38 |  1.67    8.29 |  2.67    3.25 |  3.67    2.23
                0.83    4.18 |  1.83    6.30 |  2.83    3.01 |  3.83    2.14

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=  24.80   Curve Number   (CN)= 54.0
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|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Unit Hyd Qpeak (cms)= 1.263

PEAK FLOW (cms)= 0.044 (i)
TIME TO PEAK (hrs)= 2.667
RUNOFF VOLUME (mm)= 1.687
TOTAL RAINFALL (mm)= 24.967
RUNOFF COEFFICIENT = 0.068

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

| CALIB |
| STANDHYD (0201)| Area (ha)= 31.64
|ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	15.50	16.14
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	459.27	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	4.76	
over (min)	5.00	35.00	
Storage Coeff. (min)=	6.60 (ii)	19.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
			TOTALS
PEAK FLOW (cms)=	1.34	0.14	1.381 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	23.47	4.01	11.21
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.94	0.16	0.45

(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 (0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		24.80	0.044	2.67	1.69
+ ID2= 2 (0201):		31.64	1.381	1.50	11.21
ID = 3 (0005):		56.44	1.383	1.50	7.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0209) ID= 1 DT= 5.0 min	Area (ha)= 4.58		
	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.11	1.47	
Dep. Storage (mm)=	1.50	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	174.74	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	2.41

over (min)	5.00	35.00	
Storage Coeff. (min)=	3.60 (ii)	16.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.07	
			TOTALS
PEAK FLOW (cms)=	0.41	0.01	0.416 (iii)
TIME TO PEAK (hrs)=	1.50	1.67	1.50
RUNOFF VOLUME (mm)=	23.47	3.09	16.95
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.94	0.12	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.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0209):		4.58	0.416	1.50	16.95
+ ID2= 2 (0005):		56.44	1.383	1.50	7.03
ID = 3 (0006):		61.02	1.799	1.50	7.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0205)	Area (ha)= 15.87		
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00	Dir. Conn.(%)= 30.00	
		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.14	8.73
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	325.27	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	5.11

over (min)	5.00	30.00	
Storage Coeff. (min)=	6.00 (ii)	30.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.19	0.04	
			TOTALS
PEAK FLOW (cms)=	0.56	0.06	0.573 (iii)
TIME TO PEAK (hrs)=	1.50	2.08	1.50
RUNOFF VOLUME (mm)=	23.47	4.15	9.95
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.94	0.17	0.40

(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.

CALIB	
STANDHYD (0204)	Area (ha)= 6.75
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00 Dir. Conn.(%)= 51.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.05	2.70
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	212.13	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	4.67	
over (min)	5.00	30.00	
Storage Coeff. (min)=	4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.24	0.06	
			TOTALS
PEAK FLOW (cms)=	0.44	0.02	0.452 (iii)
TIME TO PEAK (hrs)=	1.50	1.75	1.50
RUNOFF VOLUME (mm)=	23.47	3.97	13.91
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.94	0.16	0.56

***** 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.

CALIB	
STANDHYD (0203)	Area (ha)= 5.73
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.55	2.18
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.50	2.00
Length	(m)=	195.48	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	7.44	
over (min)		5.00	25.00	
Storage Coeff. (min)=		4.20 (ii)	18.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	20.00	
Unit Hyd. peak (cms)=		0.24	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.34	0.03	0.349 (iii)
TIME TO PEAK	(hrs)=	1.50	1.75	1.50
RUNOFF VOLUME	(mm)=	23.47	4.69	13.33
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.94	0.19	0.53

***** 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.

CALIB	
STANDHYD (0202)	Area (ha)= 7.92
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.56	4.36
Dep. Storage	(mm)=	1.50	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	229.78	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

				TOTALS
Max.Eff.Inten.	(mm/hr)=	50.21	5.11	
over	(min)	5.00	30.00	
Storage Coeff.	(min)=	4.20 (ii)	28.20 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	30.00	
Unit Hyd. peak	(cms)=	0.24	0.04	
PEAK FLOW	(cms)=	0.31	0.03	0.312 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	23.47	4.15	9.95
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.94	0.17	0.40

***** 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 (0001)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0202):		7.92	0.312	1.50	9.95
+ ID2= 2 (0203):		5.73	0.349	1.50	13.33
ID = 3 (0001):		13.65	0.661	1.50	11.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0002)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 (0001):	13.65	0.661	1.50	11.36
+ ID2= 2 (0204):	6.75	0.452	1.50	13.91
ID = 3 (0002):	20.40	1.113	1.50	12.21

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 (0002):	20.40	1.113	1.50	12.21
+ ID2= 2 (0205):	15.87	0.573	1.50	9.95
ID = 3 (0003):	36.27	1.686	1.50	11.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0206) | Area (ha)= 9.51
ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.52	5.99
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	251.79	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	2.41		
over (min)	5.00	40.00		
Storage Coeff. (min)=	5.86 (ii)	37.20 (ii)		
Unit Hyd. Tpeak (min)=	5.00	40.00		
Unit Hyd. peak (cms)=	0.20	0.03		
			TOTALS	
PEAK FLOW (cms)=	0.42	0.02	0.421 (iii)	
TIME TO PEAK (hrs)=	1.50	2.25	1.50	
RUNOFF VOLUME (mm)=	23.97	3.09	10.81	
TOTAL RAINFALL (mm)=	24.97	24.97	24.97	
RUNOFF COEFFICIENT =	0.96	0.12	0.43	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

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            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.

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0206):     9.51   0.421     1.50    10.81
      + ID2= 2 (  0003):    36.27   1.686     1.50    11.22
        ================================================
        ID = 3 (  0004):    45.78   2.107     1.50    11.13

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0004):    45.78   2.107     1.50    11.13
      + ID2= 2 (  0006):    61.02   1.799     1.50     7.77
        ================================================
        ID = 3 (  0007):   106.80   3.906     1.50     9.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0050)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
     **** WARNING : FIRST OUTFLOW IS NOT ZERO.
                          0.0560     0.0000    |   0.1460      3.8400
                          0.0630     0.0000    |   0.1580      4.8470
                          0.0830     0.5050    |   0.1690      5.8850
                          0.1020     1.2290    |   0.3480      6.9520
                          0.1070     1.4240    |   0.8370      8.0490
                          0.1190     2.0370    |  10.8540      9.1760
                          0.1330     2.9100    |  19.0030      9.7510
                          0.1430     3.5940    |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0007)    106.802      3.906      1.50       9.21
   OUTFLOW: ID= 1 (  0050)    106.802      0.092      4.42       9.22

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.36
                  TIME SHIFT OF PEAK FLOW         (min)=175.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.8535

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| CALIB            |
| NASHYD   (  0207)|   Area    (ha)=  34.60   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.10

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

Unit Hyd Qpeak (cms)= 1.201

PEAK FLOW (cms)= 0.059 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 1.955
TOTAL RAINFALL (mm)= 24.967
RUNOFF COEFFICIENT = 0.078

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

ADD HYD (0008)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0207):	34.60	0.059	3.33	1.96
	+ ID2= 2 (0050):	106.80	0.092	4.42	9.22
	ID = 3 (0008):	141.40	0.150	3.42	7.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102)	ID= 1 DT= 5.0 min				
	Area (ha)= 15.30	Curve Number (CN)= 62.0			
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.28				

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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.07	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.07	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.18	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.30	3.000	3.01	4.00	2.14

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     Unit Hyd Qpeak  (cms)=   2.087

     PEAK FLOW       (cms)=   0.061 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=   2.269
     TOTAL RAINFALL   (mm)=  24.967
     RUNOFF COEFFICIENT   =   0.091

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

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| CALIB             |
| STANDHYD (  0208)|   Area    (ha)=   8.27
|ID= 1 DT= 5.0 min |   Total Imp(%)=  54.00   Dir. Conn.(%)=  41.00
-------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.47          3.80
     Dep. Storage     (mm)=       1.50          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     234.80         40.00
     Mannings n             =     0.013         0.250

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


                            ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
              0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
              0.250    2.07 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
              0.333    2.07 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
              0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
              0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
              0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
              0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
              0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
              0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
              0.917    4.18 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
              1.000    4.18 | 2.000    6.30 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21         5.20
               over (min)         5.00        30.00
     Storage Coeff.  (min)=       4.80 (ii)   18.60 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.22         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.43         0.04          0.436 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      23.47         4.19          12.09
     TOTAL RAINFALL   (mm)=      24.97        24.97          24.97
     RUNOFF COEFFICIENT   =       0.94         0.17           0.48

***** 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.

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```
| RESERVOIR(  0051)|     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   |   1.2500      0.2000
                         0.2500     0.1000   |   2.5000      0.3000
                         0.6000     0.1500   |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0208)        8.270      0.436      1.50       12.09
   OUTFLOW: ID= 1 (  0051)        8.270      0.102      1.92       12.08

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.32
                  TIME SHIFT OF PEAK FLOW         (min)= 25.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0408

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


--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0102):    15.30   0.061     1.83     2.27
      + ID2= 2 (  0051):     8.27   0.102     1.92    12.08
        ==================================================
        ID = 3 (  0009):    23.57   0.162     1.83     5.71

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


--------------------
| ADD HYD  (  0010)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0008):   141.40   0.150     3.42     7.44
      + ID2= 2 (  0009):    23.57   0.162     1.83     5.71
        ==================================================
        ID = 3 (  0010):   164.97   0.266     2.08     7.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 FINISH
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Appendix G

Letters to Secondary Utilities

PEARSON
ENGINEERING LTD.

June 1, 2020 File:12012.27

Attention: Carol O'Brien

Carol O'Brien
Access Network Design
2nd Floor, 136 Bayfield Street
Barrie, Ontario
L4M 3B1

Dear Carol,

Re: Proposed Subdivision
Charter Development – West Lands, Orillia
Request for Confirmation – Bell Servicing

We are currently preparing a Functional Servicing Report (FSR) to examine the infrastructure requirements for a proposed subdivision in Orillia. The FSR is in support of the Draft Plan Approval so the development is early on at this point and time. The development proposes approximately 1276 residential units varying from single detached to high density, 1.04 ha of commercial space, 4.58 ha of institutional space. The subject property is currently undeveloped and west of the existing Stone Ridge Subdivision.

We request that, if available, you provide us your existing servicing and plan in this area and we would appreciate any comments you could provide on the serviceability of the proposed development.

We thank you in advance for your assistance and co-operation in providing the background data. If you have any questions regarding the enclosed or require any additional information, please feel free to give me a call at (705) 719-4785.

Regards,
PEARSON ENGINEERING LTD.

April M Cleaves.

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON
ENGINEERING LTD.

June 1, 2020 File:12012.

Attention: David Smith

Enbridge Gas
10 Churchhill Drive
Barrie, Ontario
L4N 8Z5

Dear David,

Re: Proposed Subdivision
Charter Development – West Lands, Orillia
Request for Confirmation – Enbridge Servicing

We are currently preparing a Functional Servicing Report (FSR) to examine the infrastructure requirements for a proposed subdivision in Orillia. The FSR is in support of the Draft Plan Approval so the development is early on at this point and time. The development proposes approximately 1276 residential units varying from single detached to high density, 1.04 ha of commercial space, 4.58 ha of institutional space. The subject property is currently undeveloped and west of the existing Stone Ridge Subdivision.

We request that, if available, you provide us your existing servicing and plan in this area and we would appreciate any comments you could provide on the serviceability of the proposed development.

We thank you in advance for your assistance and co-operation in providing the background data. If you have any questions regarding the enclosed or require any additional information, please feel free to give me a call at (705) 719-4785.

Regards,
PEARSON ENGINEERING LTD.

April M Cleaves.

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON
ENGINEERING LTD.

June 1, 2020 File:12012.27

Attention: Brenda Budd

Orillia Power Distribution Corporation
360 West Street S
Orillia, ON
L3V 6J9

Dear Brenda,

Re: Proposed Subdivision
Charter Development – West Lands, Orillia
Request for Confirmation – Orillia Power Distribution Corporation

---

We are currently preparing a Functional Servicing Report (FSR) to examine the infrastructure requirements for a proposed subdivision in Orillia. The FSR is in support of the Draft Plan Approval so the development is early on at this point and time. The development proposes approximately 1276 residential units varying from single detached to high density, 1.04 ha of commercial space, 4.58 ha of institutional space. The subject property is currently undeveloped and west of the existing Stone Ridge Subdivision.

We request that, if available, you provide us your existing servicing and plan in this area and we would appreciate any comments you could provide on the serviceability of the proposed development.

We thank you in advance for your assistance and co-operation in providing the background data. If you have any questions regarding the enclosed or require any additional information, please feel free to give me a call at (705) 719-4785.

Regards,
PEARSON ENGINEERING LTD.

April M Cleaves.

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON
ENGINEERING LTD.

June 1, 2020 File:12012.27

Attention: Xinyi Wang

Xinyi Wang
Rogers Cable
1 Sperling Drive
Barrie, Ontario
L4M 6B8

Dear Xinyi,

Re: Proposed Subdivision
Charter Development – West Lands, Orillia
Request for Confirmation – Rogers

We are currently preparing a Functional Servicing Report (FSR) to examine the infrastructure requirements for a proposed subdivision in Orillia. The FSR is in support of the Draft Plan Approval so the development is early on at this point and time. The development proposes approximately 1276 residential units varying from single detached to high density, 1.04 ha of commercial space, 4.58 ha of institutional space. The subject property is currently undeveloped and west of the existing Stone Ridge Subdivision.

We request that, if available, you provide us your existing servicing and plan in this area and we would appreciate any comments you could provide on the serviceability of the proposed development.

We thank you in advance for your assistance and co-operation in providing the background data. If you have any questions regarding the enclosed or require any additional information, please feel free to give me a call at (705) 719-4785.

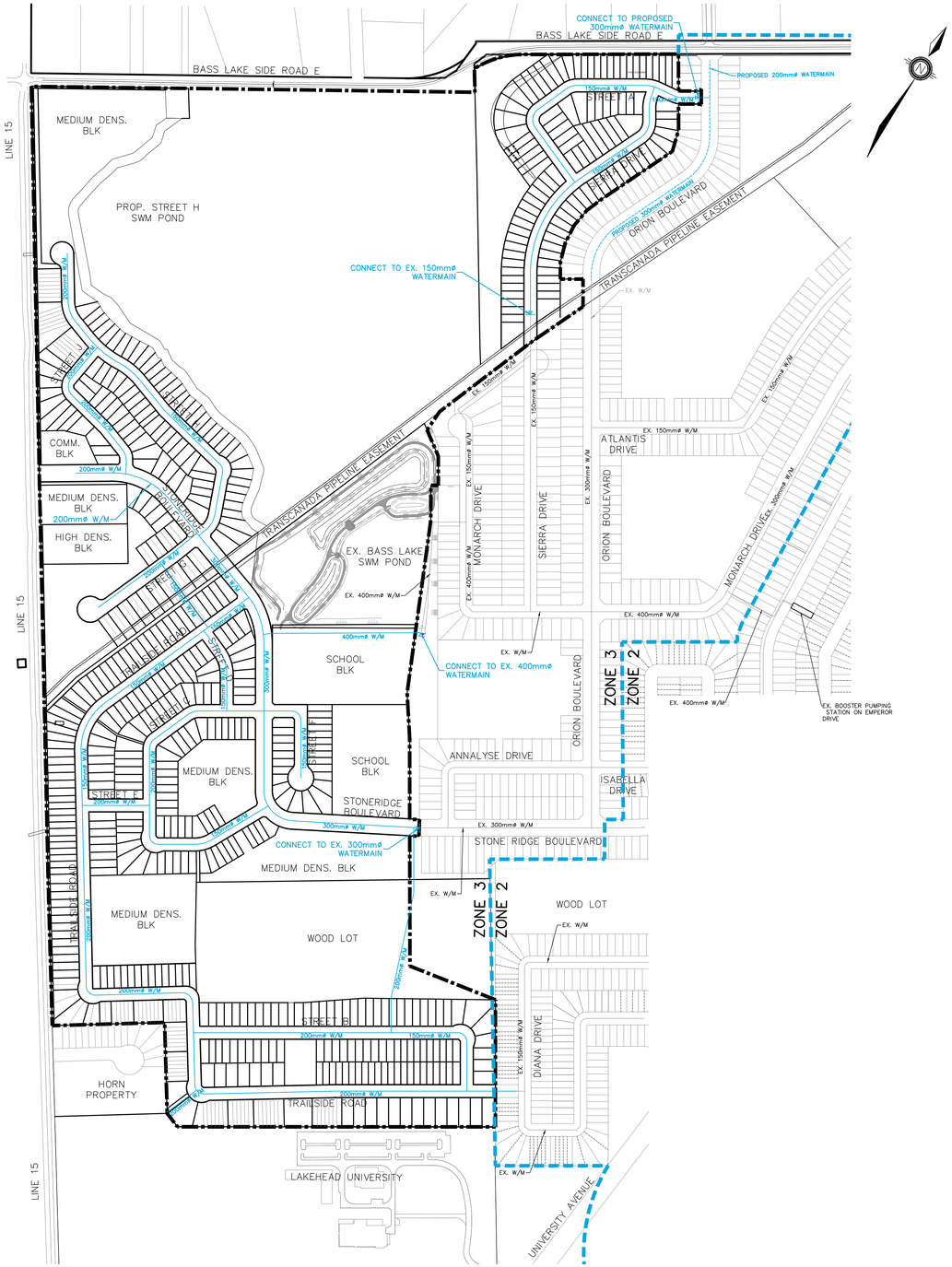
Regards,
PEARSON ENGINEERING LTD.

April M Cleaves.

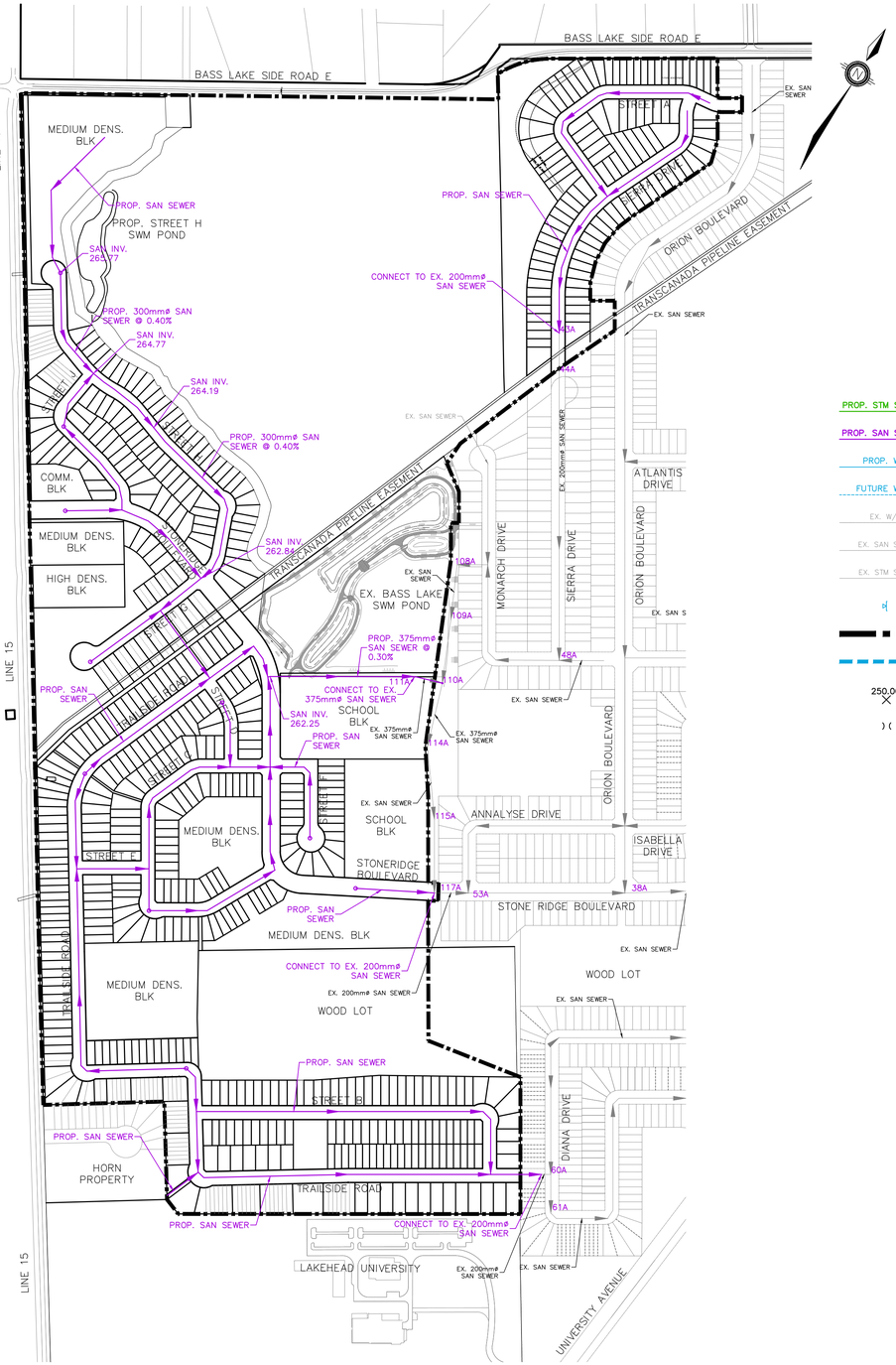
April Cleaves, B.A. Tech., C.E.T.
Project Manager

Appendix H

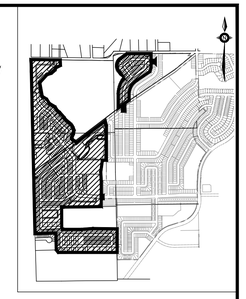
Pearson Engineering Drawings



WATERMAIN SERVICING LAYOUT



SANITARY SERVICING LAYOUT



KEY PLAN
N.T.S.

LEGEND

- PROP. STM SEWER — PROPOSED STORM SEWER
- PROP. SAN SEWER — PROPOSED SANITARY SEWER
- PROP. W/M — PROPOSED WATERMAIN SEWER
- FUTURE W/M — FUTURE WATERMAIN
- EX. W/M — EX. WATERMAIN
- EX. SAN SEWER — EX. SANITARY SEWER
- EX. STM SEWER — EX. STORM SEWER
- EX. WATERMAIN CAP
- DEVELOPMENT BOUNDARY
- WATER PRESSURE BOUNDARY
- 250.00 — PROPOSED CENTERLINE ROAD ELEVATION
-) (— HIGH POINT/GRADE BREAK

NO.	REVISION NOTE	DATE	BY
1	REVISED AS PER CITY COMMENTS	03/2023	AR

BENCHMARK

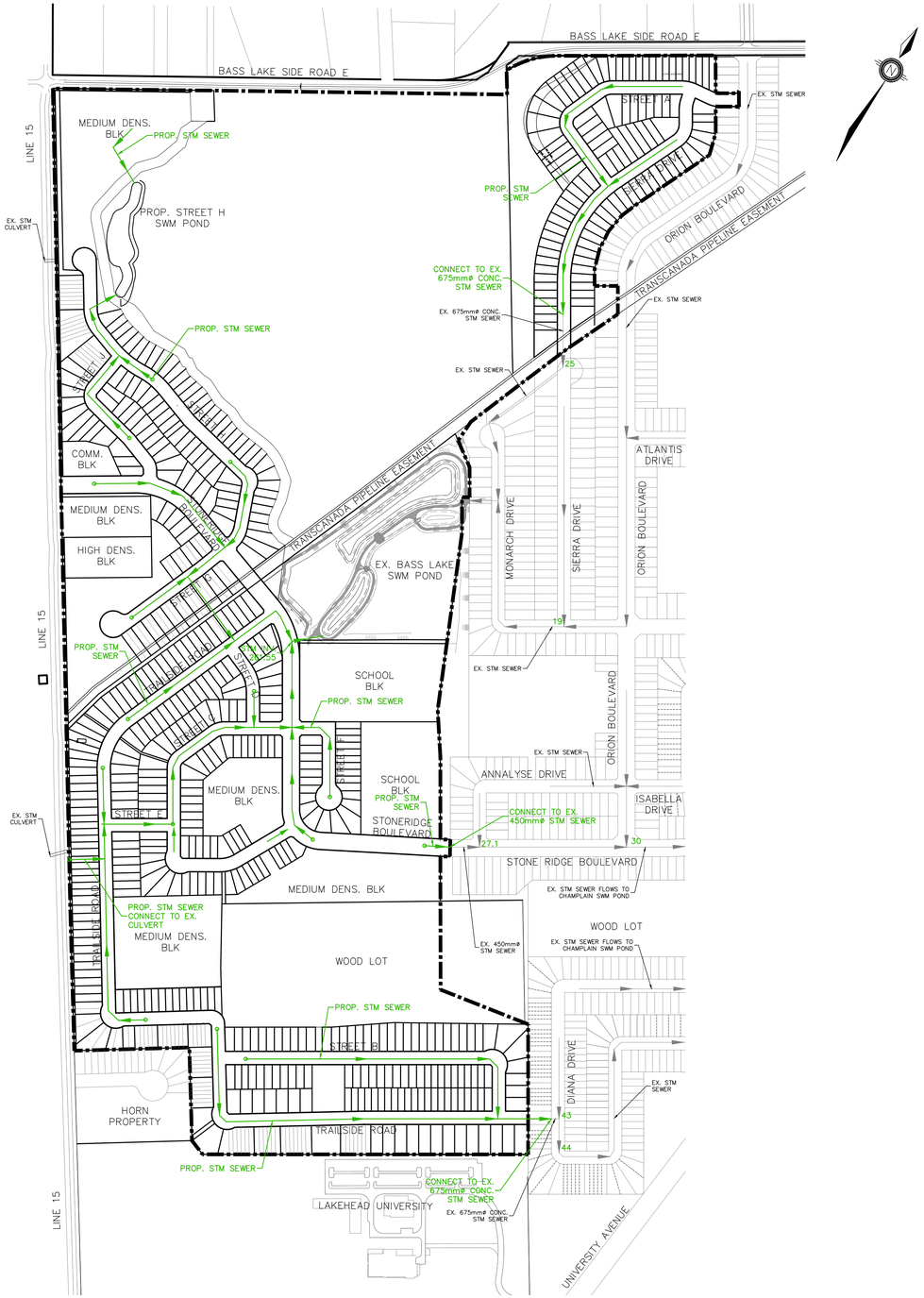
WEST RIDGE TRAILSIDE NEIGHBOURHOOD PLAN
CHARTER CONSTRUCTION

WATERMAIN AND SANITARY SERVICING LAYOUT

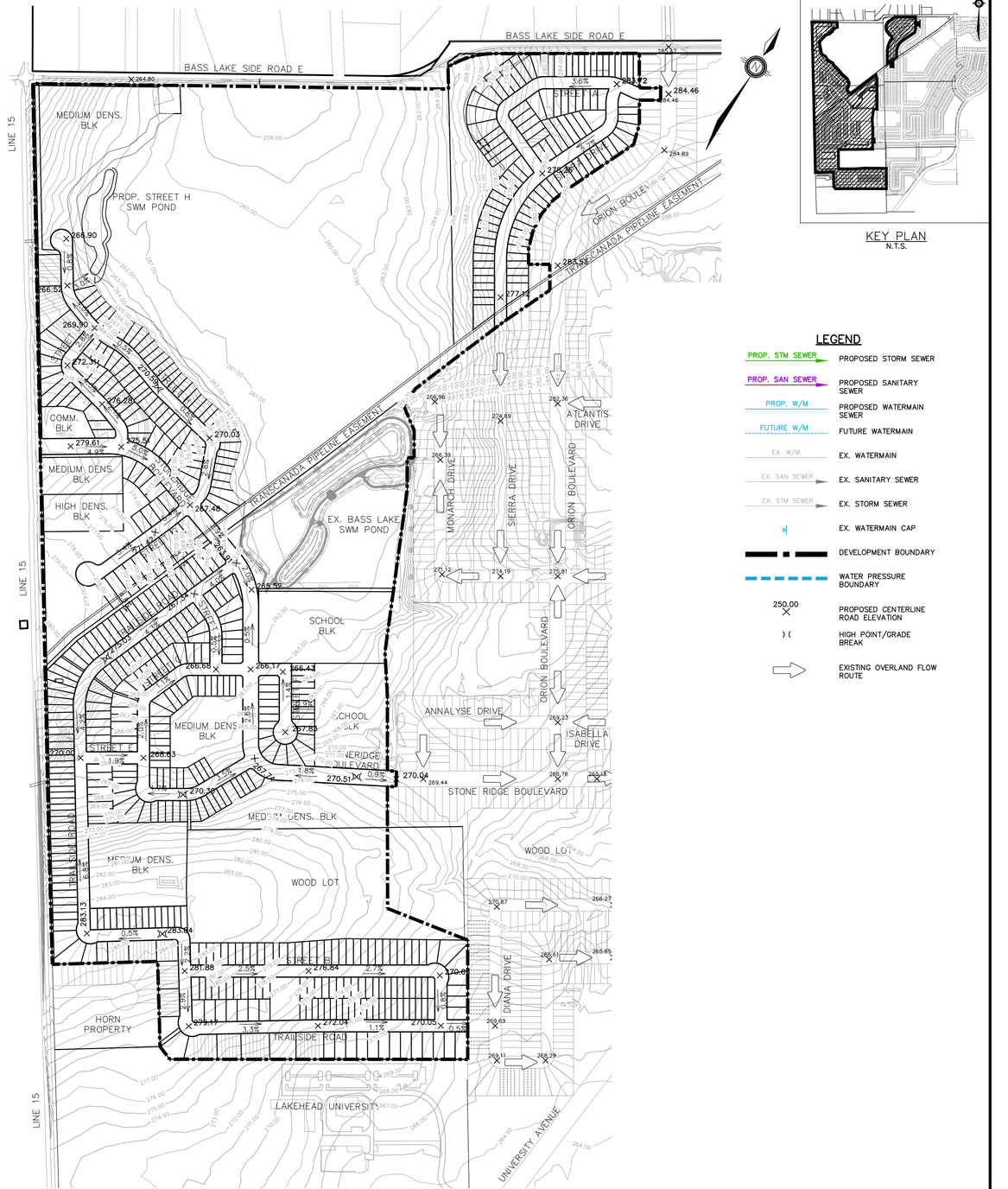
PEARSON ENGINEERING LTD.
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	IR/MWD	HORIZ SCALE	1:4000
DRAWN BY	IR	VERT SCALE	N/A
CHECKED BY	GMP	DATE	MAY 2020
PROJECT #	12012.27		
DRAWING #	FIG-2		
REVISION #	0		

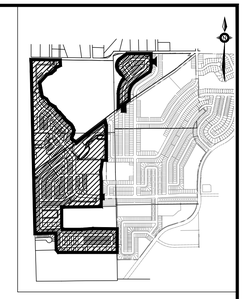
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STORM SERVICING LAYOUT



CENTERLINE ROAD ELEVATION



KEY PLAN
N.T.S.

LEGEND

- PROP. STM SEWER — PROPOSED STORM SEWER
- PROP. SAN SEWER — PROPOSED SANITARY SEWER
- PROP. W/M — PROPOSED WATERMAIN SEWER
- FUTURE W/M — FUTURE WATERMAIN
- EX. W/M — EX. WATERMAIN
- EX. SAN SEWER — EX. SANITARY SEWER
- EX. STM SEWER — EX. STORM SEWER
- EX. WATERMAIN CAP
- DEVELOPMENT BOUNDARY
- WATER PRESSURE BOUNDARY
- 250.00 — PROPOSED CENTERLINE ROAD ELEVATION
-) (— HIGH POINT/GRADE BREAK
- EXISTING OVERLAND FLOW ROUTE

BENCHMARK

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1	REVISED AS PER CITY COMMENTS	03/2023	AR

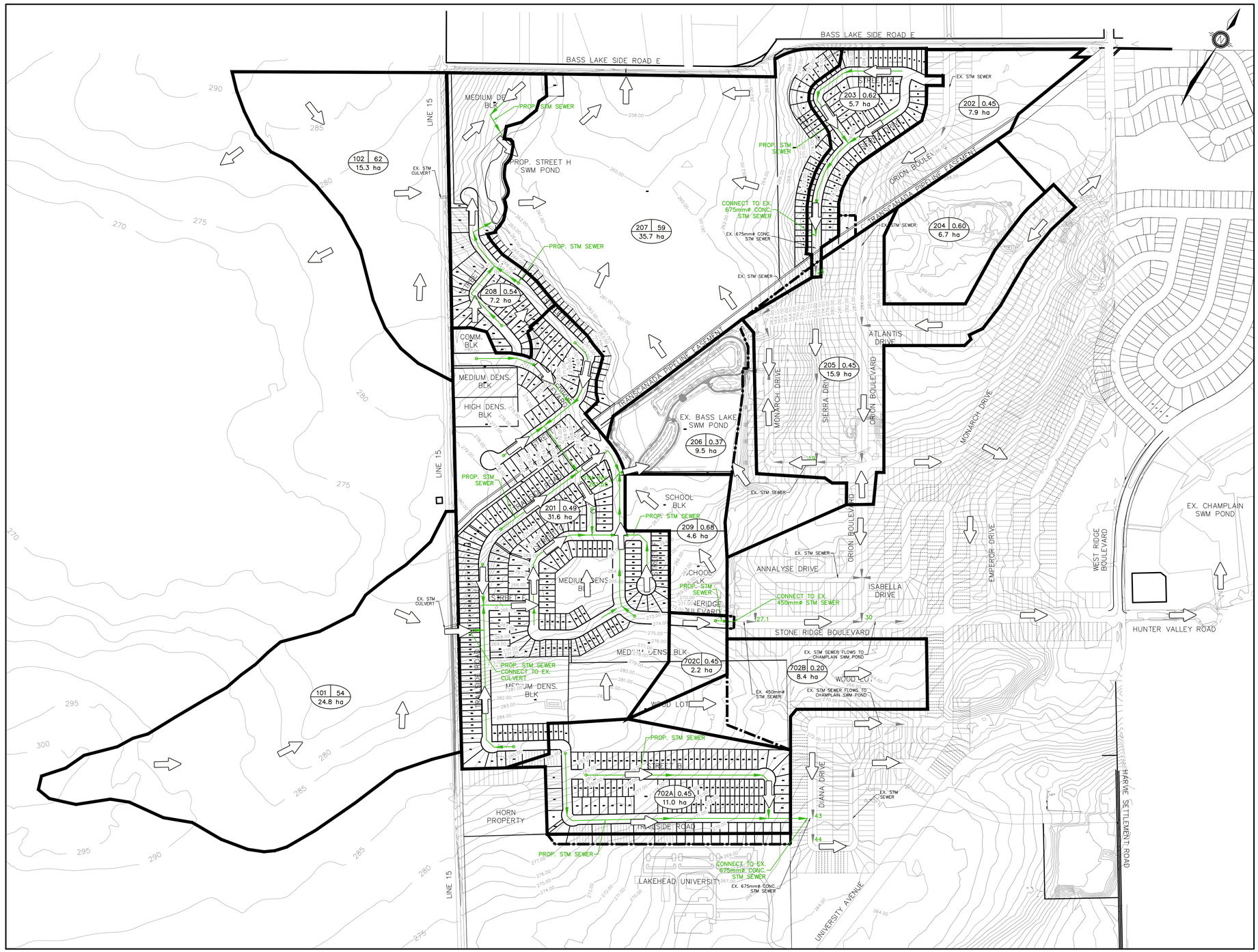
WEST RIDGE TRAILSIDE
NEIGHBOURHOOD PLAN
CHARTER CONSTRUCTION

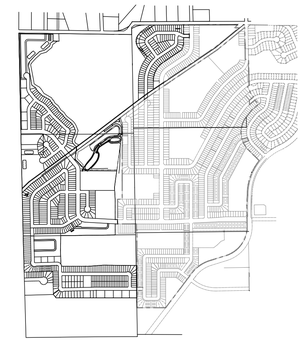
STORM SERVICING LAYOUT &
CENTERLINE ROAD ELEVATION

PEARSON ENGINEERING LTD.
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	IR/MWD	HORIZ SCALE	1:4000
DRAWN BY	IR	VERT SCALE	N/A
CHECKED BY	GMP	DATE	MAY 2020
PROJECT #	12012.27		
DRAWING #	FIG-3		
REVISION #	0		

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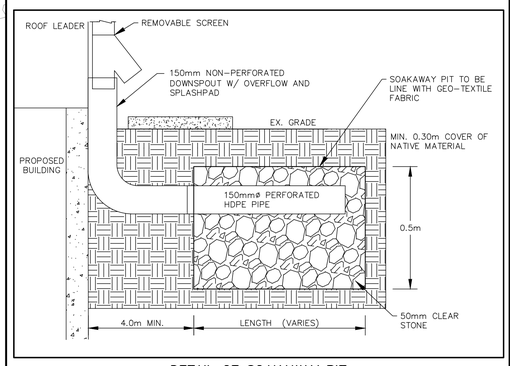




KEY PLAN
NTS

LEGEND

- SITE BOUNDARY
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA: 1 | 0.75 | 1.00 ha — TOTAL IMPERVIOUS OR CN NUMBER / AREA (ha)
- CATCHMENT BOUNDARY



DETAIL OF SOAKAWAY PIT

NO.	REVISION NOTE	DATE	BY
1	REVISED AS PER CITY COMMENTS	03/2023	AR

BENCHMARK

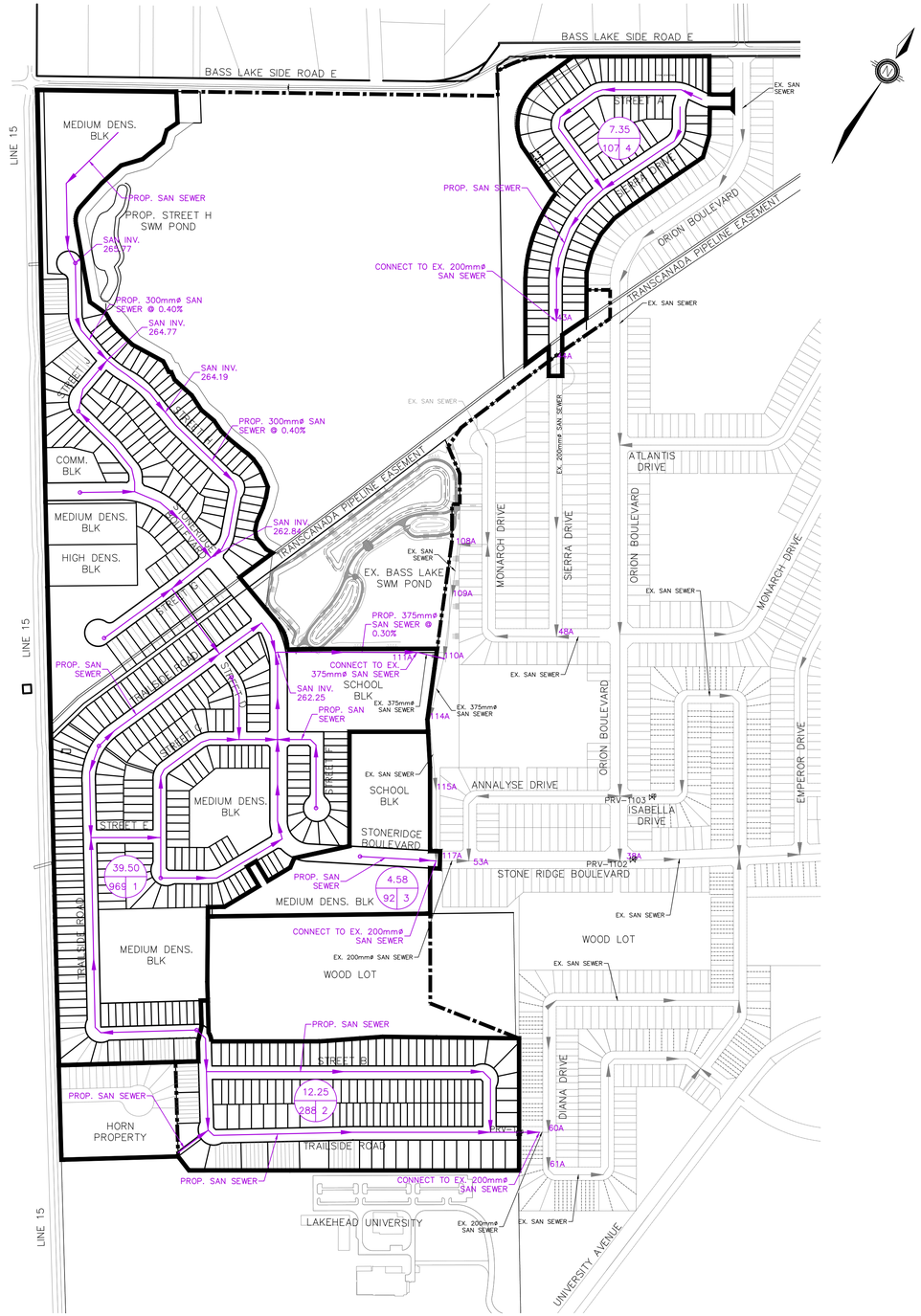
WEST RIDGE TRAILSIDE NEIGHBOURHOOD PLAN
CHARTER CONSTRUCTION

POST-DEVELOPMENT STORM CATCHMENT PLAN

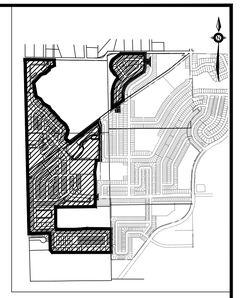
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DRAWN BY	IR	VERT SCALE	N/A
CHECKED BY	GMP	DATE	MAY 2020
PROJECT #	12012.27		
DRAWING #	FIG-4		
REVISION #	0		

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SANITARY SERVICING LAYOUT



KEY PLAN
N.T.S.

LEGEND

- PROP. SAN PIPE — PROPOSED SANITARY PIPE
- DEVELOPMENT BOUNDARY
-) (HIGH POINT/GRADE BREAK
- AREA IN HECTARES / AREA REFERENCE No. / No. OF UNITS
- SANITARY CATCHMENT BOUNDARY

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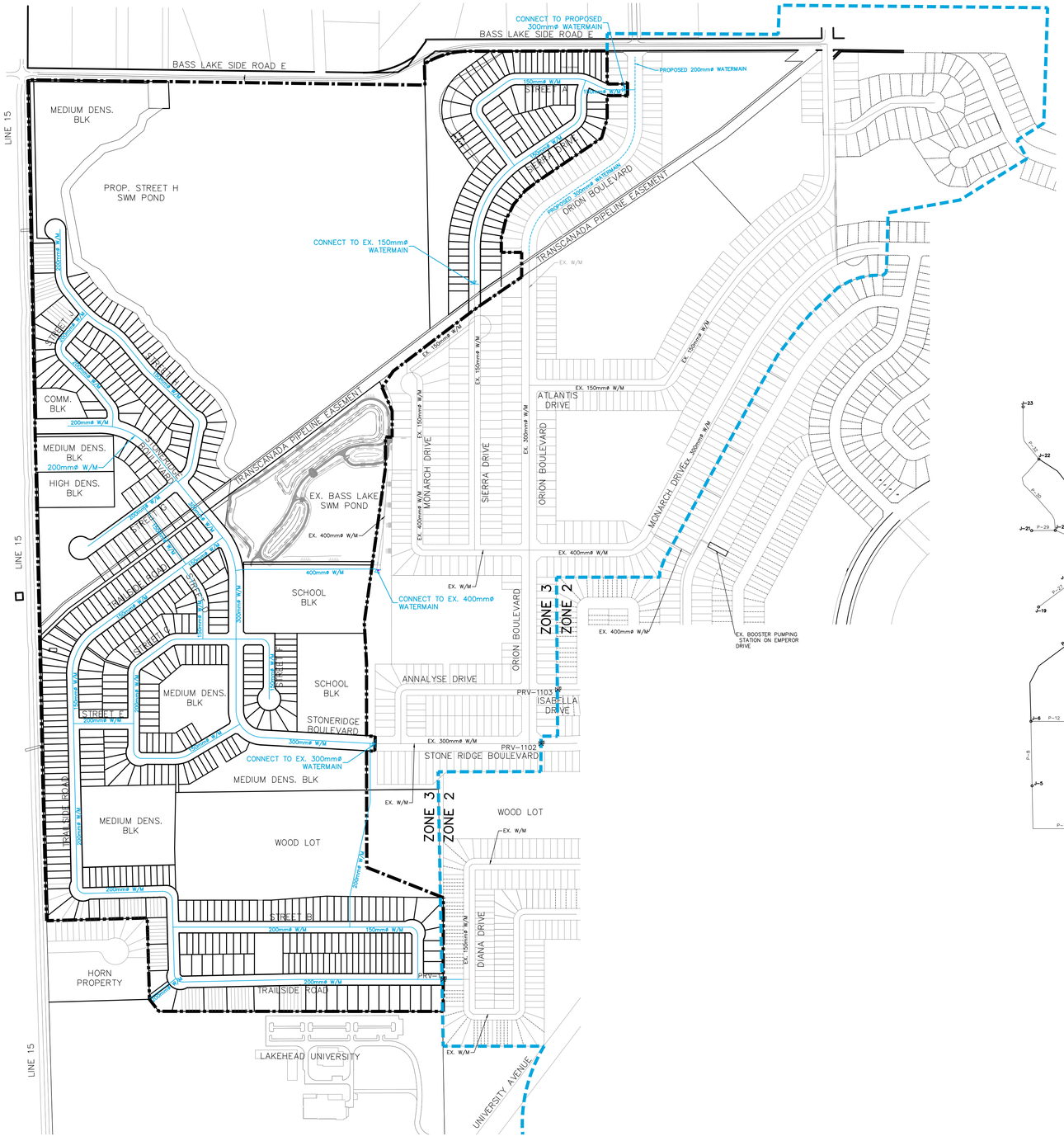
WEST RIDGE TRAILSIDE NEIGHBOURHOOD PLAN
CHARTER CONSTRUCTION

SANITARY CATCHMENT PLAN

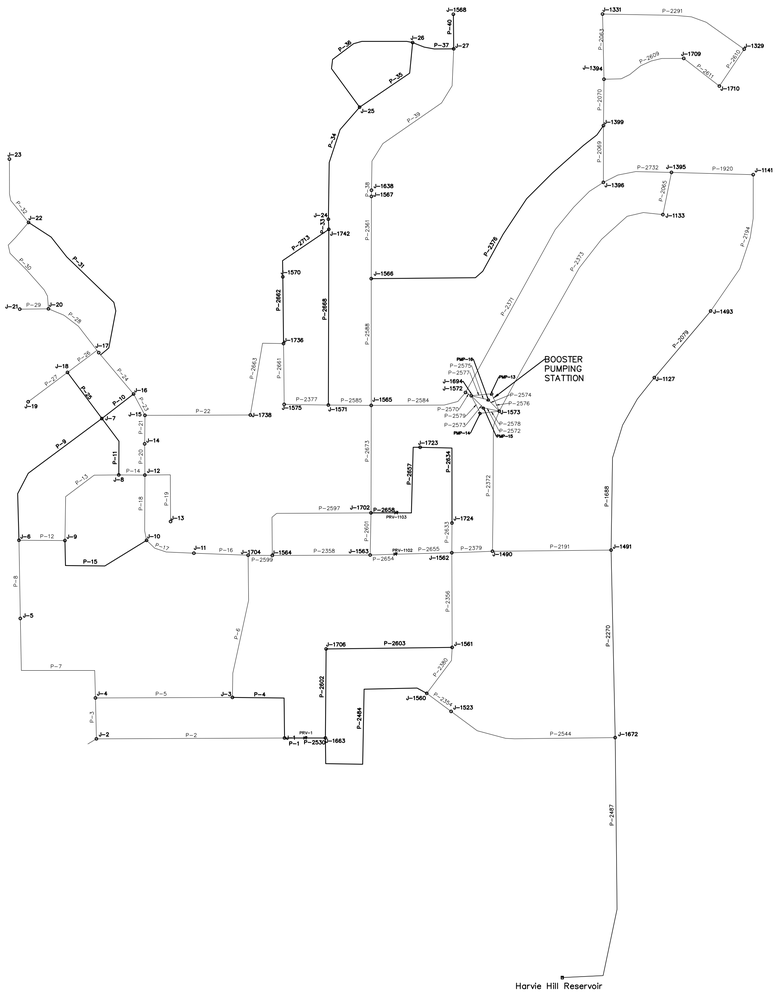
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PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	IR/MWD	HORIZ SCALE	1:4000
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CHECKED BY	GMP	DATE	MAY 2020
PROJECT #	12012.27		
DRAWING #	FIG-5		
REVISION #	0		

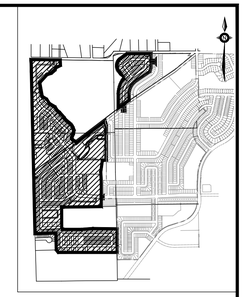
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WATERMAIN SERVICING LAYOUT



WATERMAIN MODELING LAYOUT
(NOT TO SCALE)



KEY PLAN
N.T.S.

LEGEND

- PROP. W/M — PROPOSED WATERMAIN SEWER
- FUTURE W/M — FUTURE WATERMAIN
- EX. W/M — EX. WATERMAIN
- EX. WATERMAIN CAP
- DEVELOPMENT BOUNDARY
- WATER PRESSURE BOUNDARY

NO.	REVISION NOTE	DATE	BY
1	REVISED AS PER CITY COMMENTS	03/2023	AR

BENCHMARK

WEST RIDGE TRAILSIDE NEIGHBOURHOOD PLAN
CHARTER CONSTRUCTION

WATERMAIN AND WATERCAD MODELING LAYOUT

PEARSON ENGINEERING LTD.
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	IR/MWD	HORIZ SCALE	1: 4000
DRAWN BY	IR	VERT SCALE	N/A
CHECKED BY	GMP	DATE	MAY 2020
PROJECT #	12012.27		
DRAWING #	FIG-6		
REVISION #	0		

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