

D. G. Biddle & Associates Limited

consulting engineers and planners

96 KING ST. E., OSHAWA, ONTARIO L1H 1B6 PHONE (905) 576-8500 FAX (905) 576-9730
e-mail: info@dgbiddle.com

June 1, 2022

Romspen Investment Corp.
162 Cumberland Street, Unit 300
Toronto, ON M5R 3N5

Attention: Mr. Richard Weldon

**Re: Kawartha Downs Subdivision
Preliminary Functional Servicing & Stormwater Management Report
1683 Moore Drive, 1490 County Road 28 & 1382 County Road 28
Township of Cavan-Monaghan
Our File: 121133**

Dear Sir:

In support of the application for Draft Plan of Subdivision on the above referenced property, we respectfully submit the following Preliminary Functional Servicing and Stormwater Management Report.

This report is intended to be reviewed by the Township of Cavan Monaghan, Peterborough County and the Otonabee Regional Conservation Authority to confirm that the necessary infrastructure is available to service the subject lands. Upon review of the report, we believe the approval agencies will be in a position to issue positive comments and conditions of draft approval for the Plan of Subdivision.

Please contact our office at your convenience, should you have any questions or require additional information on the enclosed report.

Yours truly,

D.G. BIDDLE & ASSOCIATES LIMITED

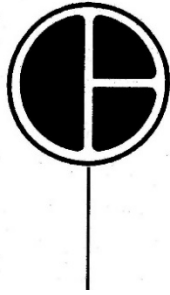
Matt Holmes, B. Eng.
EIT

David D. McNaull, P. Eng.
Municipal Design Engineer



DDM/MH/mh
<\\FSHR\Staff\Job Files\121000\121133 Kawartha Downs\121133 Reports\121133 FSR & SWM Report.doc>

D.G. BIDDLE & ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS



D. G. Biddle & Associates Limited

consulting engineers and planners

96 KING ST. E., OSHAWA, ONTARIO L1H 1B6 PHONE (905) 576-8500 FAX (905) 576-9730
e-mail: info@dgbiddle.com

**PRELIMINARY
FUNCTIONAL SERVICING AND
STORMWATER MANAGEMENT REPORT**

FOR

**1683 MOORE DRIVE, 1382 COUNTY ROAD 28 &
1490 COUNTY ROAD 28
KAWARTHA DOWNS SUBDIVISION**

TOWNSHIP OF CAVAN-MONAGHAN

PROJECT NO. 121133

\\FSHR\Staff\Job Files\121000\121133 Kawartha Downs\121133 Reports\121133 FSR & SWM Report.doc

JUNE 2022

D.G. BIDDLE & ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS

TABLE OF CONTENTS

1.0	INTRODUCTION
1.1	Purpose
1.2	Site Location & Description
2.0	DEVELOPMENT SERVICING
2.1	Sanitary Sewers
2.2	Water Distribution System
2.3	Storm Sewers and Overland Flow
2.4	Site Grading
3.0	PERMANENT STORMWATER QUALITY CONTROLS
3.1	Pond Sizing Quality Control
3.2	Extended Detention Wet Pond Design Characteristics
3.3	Sediment Forebay
3.4	Water Quality Discharge Structure
4.0	PERMANENT STORMWATER QUANTITY CONTROLS – WEST POND
4.1	Pre-Development Hydrology
4.2	Post Development Hydrology
5.0	PERMANENT STORMWATER QUANTITY CONTROLS – EAST POND
5.1	Pre-Development Hydrology
5.2	Post Development Hydrology
5.3	Stormwater Water Quality
6.0	HYDRAULIC ANALYSIS
6.1	Creek 1
6.2	Creek 2
6.3	Creek 3
6.4	Creek 4
7.0	SITE GRADING
8.0	WATER QUALITY CONTROLS DURING CONSTRUCTION
9.0	CONCLUSIONS

LIST OF REFERENCES

- | | | |
|------------|---|---|
| SCHEDULE 1 | - | Storm Sewer Design Sheet |
| | - | Sanitary Sewer Design Sheet |
| | - | Weir Calculation to Street A Low Point |
| | - | Weir Calculation to Street I Low Point |
| SCHEDULE 2 | - | Wet Pond Water Quality Pond Design and Stage-Storage-Discharge Calculations |
| | - | Dry Pond Water Quality Pond Design and Stage-Storage-Discharge Calculations |
| | - | Pond Outfall Capacity Calculations |
| | - | Time to Peak Calculations |
| SCHEDULE 3 | - | Visual Otthymo 6.0 Schematics and Output Files |
| SCHEDULE 4 | - | HEC-RAS Output Files Schematics and Output Files |

LIST OF FIGURES

FIGURE 1	-	Site Location Plan
FIGURE 2	-	Visual Otthymo Schematic - Creeks 1 & 2 (<u>Schedule 3</u>)
FIGURE 3	-	Visual Otthymo Schematic - Creek 4 (<u>Schedule 3</u>)
FIGURE 4	-	Visual Otthymo Schematic - Creek 4 Outlet to Creek 3 (<u>Schedule 3</u>)
FIGURE 5	-	Visual Otthymo Schematic – Creek 3 (<u>Schedule 3</u>)
FIGURE 6	-	Visual Otthymo Schematic - Creek 5 (<u>Schedule 3</u>)
FIGURE 7	-	Visual Otthymo Schematic - Creek 6 (<u>Schedule 3</u>)
FIGURE 8	-	Visual Otthymo Schematic - Creeks 1, 2, 4 Post Development Flows Without Attenuated Flows From Pond (<u>Schedule 3</u>)
FIGURE 9	-	Visual Otthymo Schematic - Creeks 1, 2, 4 Post Development Attenuated Flows From Subdivision (<u>Schedule 3</u>)
FIGURE 10	-	Visual Otthymo Schematic – Creeks 5 & 6 Post Development Subdivision Flows (<u>Schedule 3</u>)

LIST OF DRAWINGS
(ENCLOSED AT END OF THIS REPORT)

121133-LG-1	-	Conceptual Lot Grading Plan
121133-SS-1	-	Conceptual Site Servicing Plan
121133-SWM 1	-	Conceptual Stormwater Management Pond Plan
121133-ES-1	-	Erosion and Sediment Control Plan
121133-SD-1	-	Pre-Development Storm Drainage Plan
121133-SD-2	-	Post-Development Storm Drainage Plan
121133-HR-1	-	Hec-Ras Floodline Plan

1.0 INTRODUCTION

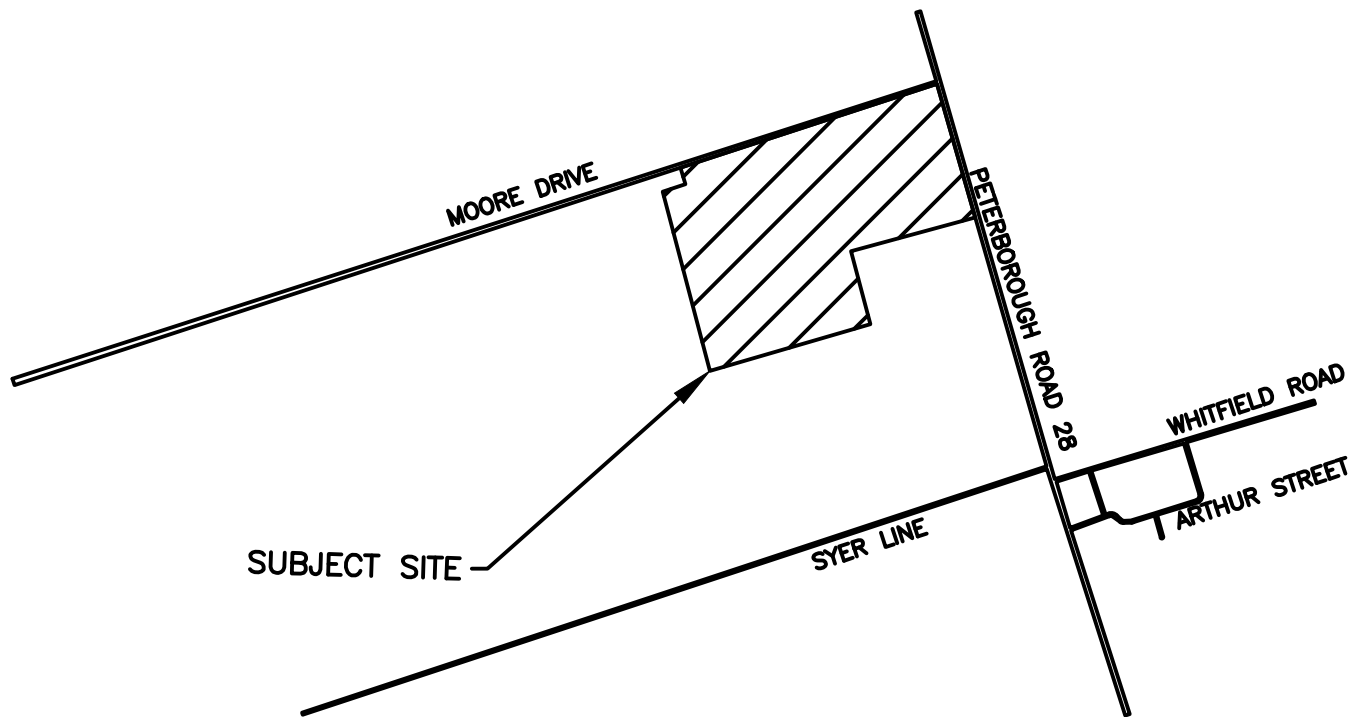
1.1 Purpose

This Preliminary Functional Servicing and Stormwater Management Report has been prepared to satisfy Conditions of Draft Approval for the proposed subdivision. It will address sanitary sewer services, watermain services, and storm water drainage works, and site grading required to proceed with the development. This report will also discuss the storm water quality and quantity control objectives for a tributary of Otonabee River in accordance with the requirements of the local governing authorities.

1.2 Site Location and Description

The subject plan is located at 1683 Moore Drive, 1490 County Road 28 and 1382 County Road 28, in the Township of Cavan Monaghan. The proposed development is bounded on the north by Moore Drive, the east by County Road 28, the south by Syer Line and vacant land on the west. A Site Location Plan is attached as Figure 1.

Lands pertaining to 1683 Moore Drive and 1490 County Road 28 within the current application consist of open field. Lands pertaining to 1382 County Road 28 consist of an existing commercial development known as Kawartha Downs. Most of the developable site drains generally in a westerly direction, where it drains into an unnamed creek which flows to the north across Moore Drive via a double culvert. The remaining site area drains to three separate culverts. Two of the three areas drain to the north across Moore Drive and the remaining area to the east across County Road 28 via a 450mm CSP culvert. The entire subject site is tributary to the Otonabee River, situated east of County Road 28.



TOWNSHIP OF
CAVAN—MONAGHAN

1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

SITE LOCATION PLAN



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905) 576-8500 • FAX (905) 576-9730

info@dgbiddle.com

SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
M.H.
M.H.
F.H.V.
MAR 2022

PROJECT
121073

DWG

FIG 1

2.0 DEVELOPMENT SERVICING

2.1 Sanitary Sewers

Currently, there is no existing municipal sanitary sewer along Moore Drive or County Road 28 to service the site. The development lands are to drain through proposed internal sanitary sewers to the low point on Street A, where the sanitary sewer will connect to a proposed sanitary pumping station. The sanitary sewer will then outlet via a 250mm force main located in the Street A, Street E, Street H and County Road 28 boulevards before it ultimately outlets to the proposed sanitary bed as illustrated on the Conceptual Site Servicing Plan, drawing 121133-SS-2.

The sanitary sewers have been designed as per Township of Cavan-Monaghan design specifications and supporting calculations are appended in Schedule 1. The proposed sanitary sewer network is illustrated on the Conceptual Site Servicing Plans, drawings 121133-SS-1 and 121133-SS-2.

2.2 Water Distribution System

Currently, there is no existing municipal water system along Moore Drive or County Road 28 to service the site. The proposed development is to be serviced by extending the watermain from the Township of Cavan-Monaghan municipal facility. The proposed distribution network is illustrated on the attached Conceptual Site Servicing Plan, drawing 121133-SS-1.

2.3 Storm Sewers and Overland Flow

The proposed storm sewer system has been designed as per Township of Cavan Monaghan engineering criteria. Stormwater runoff from the proposed development will be captured by a conventional storm sewer network consisting of a positive drainage surface and minor storm sewer network. Post-development flows are proposed to discharge to the stormwater management pond in the southwest corner of the site. Major flows will be conveyed southwest to the low point on Street A by the proposed road network. A 32.0m long overland flow weir has been sized to convey the major flows from the subject property into the stormwater management pond. Supporting calculations can be found appended at

the end of this report. The internal minor system has been designed to convey the 5-year return frequency event in accordance with the Township of Cavan-Monaghan design standards. The storm sewer design sheet is attached in Schedule 1. The proposed storm sewers are illustrated on the attached Conceptual Site Servicing Plan, drawing 121133-SS-1.

For the eastern lot parcel, post-development flows are proposed to discharge to the dry stormwater management pond in the southeast corner of the parcel. Major flows will be conveyed to a low point on Street H by the proposed road network. A 14.0m long overland flow weir has been sized to convey the major flows from the subject property into the stormwater management pond. Supporting calculations can be found appended at the end of this report.

As seen on the Post-Development Drainage Scheme, drawing 121133-SD-2, Street A has a low point at the West entrance which has 1.17 ha draining to two catch basins at the low point to the north. These catch basins then outlet to a stormceptor manhole before outletting through a headwall (HW-300) to the West, as illustrated on the Conceptual Servicing Plan, 121133-SS-1.

2.4 Site Grading

Road and lot grades for the subject lands have been illustrated on the Conceptual Lot Grading Plan 121133-LG-1 and are designed in accordance with the Township of Cavan Monahan's design criteria. Lots are proposed to be graded at 2.0% minimum to 5.0% maximum. The road network for the development area has been predominately oriented in a south to north manner, running parallel with the topography. The draft plan proposes local right-of-way widths of 20.0m with 2 connection points on Moore Drive and one on County Road 28.

3.0 PERMANENT STORMWATER QUALITY CONTROLS - WEST POND

The wet stormwater management pond is located in the southwest corner of the main lot block, Block 393 on the Draft Plan. Access to the pond will be provided by a proposed driveway from Street A to the pond block. The proposed minor storm sewer system, illustrated on the Conceptual Servicing Plan, is based on preliminary road and lot grading for the development application. In addition to the minor system, major overland flows in excess of the minor storm sewer capacity will be accommodated within right of ways and overland flow routes to ensure no flooding on private property will occur.

3.1 Pond Sizing for Quality Control

As noted in Section 1.2, the subject property is tributary to Otonabee River. The contributing lands draining to the proposed stormwater management pond for water quality control can be seen on the Post Development Storm Drainage Plan attached as drawing 121133-SD-2. The following criteria must be followed in the design of the end-of-pipe stormwater management pond:

- Enhanced fisheries protection in accordance with MOE (March 2003) and ORCA requirements;
- Provide 48 hour detention for run-off from a 25mm storm event for erosion control;
- Post-development to pre-development peak flow control for all storm events, up to and including a 100-year return frequency;

Pond sizing requirements are based on the type of pond and impervious level of the development. The drainage area to the stormwater management pond is 21.70ha as shown on drawing 121133-SD-2. Since the development consist of residential areas and a park block, the impervious level of various land uses was divided accordingly. For residential areas, 65% imperviousness was used, while the park block was modelled as 20% impervious.

The permanent and active (fluctuating) water quality storage requirements as per the M.O.E. guidelines are shown in the following table:

TABLE 1 – COMPOSITE IMPERVIOUSNESS

IMPERVIOUS LEVEL	PERMANENT STORAGE VOLUME REQUIRED (m ³)	FLUCTUATING STORAGE VOLUME REQUIRED (m ³)	TOTAL DRAINAGE AREA (ha)	PERMANENT VOLUME (m ³)	FLUCTUATING VOLUME REQUIRED (m ³)
65.0%	173	40	20.87	3610.5	834.8
20.0%	20	40	0.83	16.6	33.2
TOTAL			21.70	3627.1	868.0

In addition to the fluctuating storage volume for stormwater quality required under the M.O.E. Guidelines, additional storage volume to attenuate runoff associated with increased erosion within the watercourse has been provided. Additional storage volume has been provided in the pond to detain the runoff generated by a 25mm, Chicago distribution rainfall for 4 hours which was simulated in the Visual Otthymo. The erosion control volume requirement is shown in the below:

TABLE 2 – EROSION CONTROL VOLUME REQUIREMENTS

IMPERVIOUS LEVEL	TOTAL RAINFALL (mm)	AREA (ha)	RUN-OFF DEPTH (mm)	RUN-OFF VOLUME (m ³)
65%	25	20.86	16.8	3504.48
20%	25	0.83	7.53	62.50
TOTAL			21.69	3566.98

3.2 Extended Detention Wet Pond Design Characteristics

The proposed design for the wet pond, shown on drawing 121133-SWM-1, has the following characteristics:

- 7:1 side slopes for 3.5m on both sides of the permanent pool
- 4:1 side slopes above active (fluctuating) water surface elevation
- 4:1 side slopes below 7:1 sloping
- 4.0m maintenance access

- 199.50m permanent pool elevation
- 4174m³ permanent volume provided
- 200.03m maximum water erosion fluctuating elevation
- 5032m³ water quality fluctuating volume provided
- Sediment forebay at inlet location
- 13277 m³ water quantity fluctuating volume provided
- Detention time minimum of 24-hours

3.3 Sediment Forebay

The proposed sediment forebay will be separated from the two pond main cells by a submerged earth berm. The top of the berm will be set at the permanent pool water surface elevation of 199.50m. A 450mm CSP culvert will be in both the north and south side of the berm to help direct pond flows to the discharge structures. In addition to the above, the sediment forebay will be designed with the following characteristics:

- The forebay will not exceed 1/3 of the total permanent pool
- The forebay length will be such that the velocity in the forebay will be 0.5m at the outlet culverts
- The minimum bottom width of the forebay will be 1/8 of the Forebay Dispersion Length

Calculations for the sediment forebay design are appended in Schedule 2.

3.4 Water Quality Discharge Structure

The design proposed for the pond quality discharge structure will be a headwall connected to a 2400mm x 1800mm Box Chamber manhole. This box chamber will include a cast in place concrete wall with two openings which will be covered by orifice plates to control discharge. The pond is to have two outlets. The first headwall outlets to a drainage swale to the north through MH ST-9 which is complete with two orifice plates. The second outlets to the south to the existing creek through MH ST-10 which is complete with two orifice plates.

Details of the water quality discharge structures are illustrated on the Stormwater Management Wet Pond Plan, drawing 121133-SWM-1. Calculations for the water quality discharge structure orifice sizing can be found in Schedule 2.

4.0 PERMANENT STORMWATER QUANTITY CONTROLS - WEST POND

As mentioned previously, the proposed stormwater management pond will provide quantity controls in addition to quality controls as outlined above. The Township of Cavan Monaghan design criteria states that the post development release rates are to be attenuated to the pre-development release rates for each of the 2 through 100-year storm events. The residential lot fabric is tributary to 4 distinct drainage areas prior to discharging offsite. The stormwater management pond discussed in this section is primarily tributary to two of the four overall drainage areas of the site. Post development flows will drain immediately north of the subject site, containing creek 2, and immediately south of the subject site, containing creek 4. Both drainage areas discharge north via CSP culvert(s) under passing Moore Drive, refer to the Post Development Storm Drainage plan, SD-2. It should be noted that a description of the creeks and their respective drainage areas within the subject site is provided in section 6.0 of this report.

4.1 Pre-Development Hydrology

Due to development straddling a drainage divide, the pre-development flows were assessed immediately north and south of the subject site. As illustrated on, Pre-Development Drainage Scheme, SD-1, the pre-development drainage area north of the subject site is 50.64ha and the pre-development drainage area south of the subject site is 106.16ha. Using the NASHYD Sub-routine of the computer program Visual OTHYMO 6.0, pre-development peak flows were computed using the City of Peterborough Airport rainfall intensity for the 2, 5, 10, 25, 50 and 100-year storm events. The results for both pre-development drainage areas are tabulated below in the next section.

4.2 Post Development Hydrology

The post-development watershed has been modelled using a 4-hour Chicago distribution rainfall event with total impervious ratios based on land use.

The STANDHYD Sub-routine was used to simulate the impervious surfaces of the site and calculate the post-development flows from the site. The results are tabulated in **Table 3** and **Table 4** for both the North and South Pond outlets.

The quantity control storage volume of approximately 15,900m³ (excludes the erosion volume of 3524m³) is achieved through the excavation and berming of the pond to an elevation of 201.70. This provides approximately 0.9m free-board above the anticipated 100-year water surface elevation of the pond. The maximum required volume is 10,197m³. Through the implementation of the two box chambers with two orifice plates each, the proposed stormwater management pond will attenuate post-development peak flows to pre-development levels. The ROUTE RESERVOIR Sub-Routine of HYMO 6.0 was used to simulate the performance of the pond. A comparison of pre to routed post-development flows are tabulated below. The OTTHYMO Summary Files and schematics are attached in Schedule 3.

TABLE 3 – NORTH OUTLET PRE AND POST-DEVELOPMENT PEAK FLOWS

RETURN FREQUENCY (Years)	*PRE-DEV. PEAK FLOW (4hr CHICAGO) (m ³ /s)	POST- DEVELOPMENT FLOW (4hr CHICAGO)		
		**UNCONTROLLED (m ³ /s)	*ATTENUATED (m ³ /s)	TOTAL (m ³ /s)
2	0.69	0.27	0.09	0.36
5	1.33	0.41	0.17	0.58
10	1.92	0.59	0.24	0.83
25	2.59	0.78	0.28	1.06
50	3.29	0.99	0.32	1.31
100	3.85	1.15	0.34	1.49
100 Peterborough	6.01	1.48	0.39	1.87

*Refer to Figure 2 (Schedule 3) Addhyd 8

**Refer to Figure 8 (Schedule 3) Addhyd 9

⁺ Refer to Figure 9 (Schedule 3) Route Reservoir 11. Reported values in the above table represent half of the reported flow values in Visual Otthymo as it is assumed the flows are evenly split to the north and south outlets.

TABLE 4 – SOUTH OUTLET PRE AND POST-DEVELOPMENT PEAK FLOWS

RETURN FREQUENCY (Years)	*PRE-DEV. PEAK FLOW (4hr CHICAGO) (m ³ /s)	POST-DEVELOPMENT FLOW (4hr CHICAGO) (m ³ /s)		
		**UNCONTROLLED (m ³ /s)	*ATTENUATED (m ³ /s)	TOTAL (m ³ /s)
2	0.62	0.36	0.09	0.45
5	1.19	0.64	0.17	0.81
10	1.74	0.92	0.24	1.16
25	2.33	1.21	0.28	1.49
50	2.99	1.57	0.32	1.89
100	3.48	1.78	0.34	2.12
100 Peterborough	4.83	2.30	0.39	2.69

*Refer to Figure 3 (Schedule 3) Addhyd 43

**Refer to Figure 8 (Schedule 3) Addhyd 5

⁺ Refer to Figure 9 (Schedule 3) Route Reservoir 11. Reported values in the above table represent half of the reported flow values in Visual Otthymo as it is assumed the flows are evenly split to the north and south outlets.

As reported above, all post-development peak flows up to and including the 100-year return frequency event will be attenuated to the pre-development flow rates. Therefore, no adverse impact to the downstream receiving watercourse is anticipated.

5.0 PERM. STORMWATER QUANTITY CONTROLS–E. POND

The stormwater management pond is in the southeast corner of the east lot block, Block 392 on the Draft Plan and will provide quantity controls only. Access to the pond will be provided by a proposed driveway from Street 'I' to the pond block. The pond will be tributary to approximately 3.85ha. Since the post development flows are less than 5ha the MOE guidelines do not require a wet pond design with a permanent pool. Similar to the eastern pond requirements, the Township of Cavan Monaghan design criteria states that the post-development release rates are to be attenuated to the pre-development release rates for each of the 2 through 100-year storm events. This portion of the residential lot fabric is tributary to the remaining 2 distinct drainage areas prior to discharging offsite as outlined in the previous section. Post development flows will drain immediately south of the subject site containing creek 6. Attenuated flows will discharge east via CSP culvert under passing County Road 28, refer to the Post Development Storm Drainage plan, SD-2. Please note that a description of the creeks and their respective drainage areas within the subject site is provided in section 6.0 of this report.

5.1 Pre-Development Hydrology

The land surrounding this residential area straddles a high point and has drainage flowing to two culverts, going north under Moore Drive and south-east under County Road 28, as seen in drawing 121133-SD-1.

5.2 Post Development Hydrology

In post-development, the pond outlets to the south to a culvert which crosses County Road 28 and into the Otonabee River. This also causes a reduction in flows to the culvert to the North crossing Moore Drive, as shown in **Table 5**.

TABLE 5 – PRE- AND POST-DEVELOPMENT PEAK FLOWS AT NORTH CULVERT

RETURN FREQUENCY (Years)	* PRE-DEV. PEAK FLOW (4hr CHICAGO) (m ³ /s)	** POST- DEVELOPMENT FLOW (4hr CHICAGO) (m ³ /s)
2	0.19	0.10
5	0.35	0.20
10	0.49	0.28
25	0.66	0.38
50	0.83	0.48
100	0.97	0.57
100 Peterborough	1.44	0.86

*Refer to Figure 6 (Schedule 3) Addhyd 64

**Refer to Figure 10 (Schedule 3) Nashyd 13

Since the development consist of a residential area, 65% imperviousness was used. With the proposed development, there will be an increase in impervious surfaces resulting in an increase in stormwater runoff over pre-development conditions. As mentioned previously the Township of Cavan-Monaghan design criteria states that the post-development release rates are to be attenuated to the pre-development release rates for each of the 2 through 100-year storm events.

Using the NASHYD Sub-routine of the computer program HYMO 6.0, pre-development peak flows were computed using the City of Peterborough Airport rainfall intensity for the 2, 5, 10, 25, 50 and 100-year storm events. The STANDHYD Sub-routine was used to simulate the impervious surfaces of the site and calculate the post-development flows from the site. The results are tabulated in **Table 6** for the pond outlet.

TABLE 6 – DRY POND OUTLET PRE AND POST-DEVELOPMENT PEAK FLOWS

RETURN FREQUENCY (Years)	* PRE-DEV. PEAK FLOW (4hr CHICAGO) (m³/s)	** TOTAL POST- DEVELOPMENT FLOW (4hr CHICAGO) (m³/s)
2	0.21	0.16
5	0.40	0.27
10	0.58	0.37
25	0.78	0.47
50	0.99	0.58
100	1.16	0.66
100 Peterborough	1.96	0.86

* Refer to Figure 7 (Schedule 3) Addhyd 72

** Refer to Figure 10 (Schedule 3) Addhyd 17

The storage volume calculations and stage-storage-discharge relationship are attached at the end of this report. As reported above, the post-development peak flows from the site are less than the pre-development flows; therefore, no adverse impact to the downstream receiving watercourse is anticipated.

5.3 Stormwater Quality Control

Stormwater quality treatment prior to discharge will be provided through the implementation of a Stormceptor manhole which will provide treatment prior to when the sewer outlets into the dry stormwater management pond.

6.0 HYDRAULIC ANALYSIS

The developable area within the subject site is adjacent to several defined streams/creeks. There is currently no modelling data for the creeks to ascertain the flooding limits within the property. As such, this analysis was undertaken to establish the regulatory floodline of each respective creek using the HEC-RAS computer software.

The HEC-RAS model requires key input information to accurately determine the anticipated water surface profile during rainfall events. The following sources of information were used to compile the existing floodline mapping:

- The cross-section data was obtained from First Base Solutions (FBS) topographic mapping. The cross-section locations are illustrated on the HEC-RAS Floodline Plan, drawing 121133 HR-1 at the end of this report;
- Culvert data for the existing culverts on Moore Drive and County Road 28 was obtained from field surveys completed by D.G. Biddle & Associates Staff in February 2022;

The subject site is part of 4 discernible macro drainage tributaries flowing to a defined stream/creek adjacent to the developable area, refer to the Pre-Development Storm Scheme SD-1. Each tributary flows to a culvert(s) under passing Moore Drive or County Road 28. The macro drainage tributaries areas are further subdivided in the Hec-Ras Floodline Plan, Drawing HR-1, to ascertain the 100-year flows draining to the appropriate cross-section. This was done by delineating the flow path and calculating the time to peak for each subdivided area. The resulting time to peak values, along with the associated drainage areas, could then simulate the 100-year flows in the Visual Otthymo 6.0 program which was then added into the HEC-RAS computer software. Below is a description of each creek associated to each drainage area. Refer to the HEC-RAS output files in Schedule 4 and Figures 2 – 7 in Schedule 3 for the Visual Otthymo Schematic for the corresponding flow data.

6.1 Creek 1 and 2

Creeks 1 and 2 are tributary to approximately 50.65ha of open lands, Drainage ID #8, and drains in a northerly direction. This area is located just north of the developable area. Creeks 1 and 2 converge just south of Moore Drive and drains to an existing 700mm CSP culvert under passing Moore Drive. The culvert is located approximately 880m west of the intersection of Moore Drive and County Road 28.

6.2 Creek 3 and 4

Creeks 3 and 4 are tributary to approximately 987.14ha of lands, Drainage ID #29, 33, 43, 54, 57, 58 and drains in a northerly direction. This area is located west and south of the developable area. Creeks 3 and 4 converge approximately 850m south of Moore Drive and drains to an existing double CSP culvert under passing Moore Drive. The culvert is located approximately 2,060m west of the intersection of Moore Drive and County Road 28.

6.3 Creek 5

Creek 5 is tributary to approximately 9.19ha of lands, Drainage ID #64 and drains in a northerly direction. This area is located just northeast of the developable area. Creek 5 drains to an existing 450mm CSP culvert under passing Moore Drive. The culvert is located approximately 25m west of the intersection of Moore Drive and County Road 28.

6.4 Creek 6

Creek 6 is tributary to approximately 13.98ha of lands, Drainage ID #72 and drains in a easterly direction. This area is located southeast of the developable area. Creek 6 drains to an existing 450mm CSP culvert under passing County Road 28. The culvert is located approximately 190m south of the intersection of Moore Drive and County Road 28.

7.0 SITE GRADING

In general, the site will be graded in a manner which will satisfy the following goals:

- Satisfy the Township of Cavan-Monaghan boulevard and road grading criteria including:
 - Minimum Road Grade: 0.5%
 - Maximum Road Grade: 8.0%
 - Minimum Surface Slope for Lots: 2.0%
 - Maximum Surface Slope for Lots: 3:1
- Minimize the volume of earth to be moved and minimize cut/fill differential
- Achieve stormwater management required for the site.

Details of the conceptual site grading is illustrated on the Conceptual Site Grading Plan (drawing 121133-LG-1).

8.0 WATER QUALITY CONTROLS DURING CONSTRUCTION

During the construction period, the removal of natural vegetation causes the transport of large amounts of sediment during rainfall events. To minimize the sediment laden stormwater leaving the site during construction, it is recommended the following sediment control techniques be implemented. These details are illustrated on the Conceptual Erosion and Sediment Control Plan, drawing 121133-ES-1.

1. Perimeter Enviro Fence
2. Controlled Construction Vehicle Access Routes
3. Sediment Control Pond
4. Good Housekeeping Practices

8.1 Perimeter Enviro Fence

Perimeter enviro fence will be installed at the limit of grading for the development. It is intended to prevent sediment transportation to neighbouring lands and creeks. The perimeter enviro fence will be installed prior to topsoil removal and rough grading of the development. Upon completion of topsoil stockpiling, this area will be surrounded by fencing. The enviro fence within the developments shall remain in service until the fine grading and sodding are undertaken within the development.

8.2 Controlled Construction Vehicle Access Routes

Construction vehicle access routes will be kept to a minimum. The entrance will be installed prior to stripping and rough grading and will not be removed until the road is being prepared for asphalt.

8.3 Sediment Control Pond

During the construction of below grade services, the stormwater management pond will be implemented as the primary means of removing sediment from stormwater, prior to being discharged and being outlet to the Otonabee river. Upon completion of construction, fine grading and sodding, the pond should be inspected to determine if there is an acceptable volume of accumulated sediment to permit it to operate as a permanent water quality pond.

If accumulated sediment volumes are excessive, it must be removed prior to being assumed by the Township of Cavan-Monaghan.

9.0 CONCLUSIONS

The preceding report identifies the functional servicing and stormwater management requirements for the development proposal. The investigations into these requirements have resulted in the following conclusions for the development proposal:

- Sanitary services can be provided by a gravity sewer to the site's low point where it will connect to a sanitary pumping station before exiting the site via a 250mm sanitary force main which will be connected to the proposed sanitary bed illustrated on drawing 121133-SS-2.
- Water services are to be provided by connecting to the existing municipal facility.
- The implementation of a stormwater management wet pond for the western lot fabric will provide Level 1 quality control as well as attenuate all post-development flows to the pre-development levels.
- The implementation of a dry stormwater management pond for the eastern lot fabric in conjunction with an orifice control device is proposed to attenuate all post-development flows to the pre-development levels.
- Temporary sediment controls during construction can be managed by the use of perimeter enviro fence, construction vehicle access route, and good engineering practices.

SCHEDULE 1

- STORM SEWER DESIGN SHEET**
- SANITARY SEWER DESIGN SHEET**
- WEIR CALCULATION TO STREET A
LOW POINT**
- WEIR CALCULATION TO STREET H LOW POINT**

STORM SEWER DESIGN SHEET

D.G.Biddle and Associates Ltd.
Consulting Engineers and Planners

										Run Off Coefficients							
Municipality	Township of Cavan-Monaghan		Design	M.H.		Criteria		Park		I= 0.25	Townhouses		I= 0.85				
Project	Kawartha Downs		Checked	F.H.V.		n	0.013		S.F.Residential		I= 0.65-0.75	Apartments		I= 0.90			
Project No.	121133		Date	May 30, 2022		STORM	5 YEAR		School		I= 0.65	Commercial		I= 0.90			
Location			Drainage Design				Rational Design			Pipe Data							
Street	From Mh	To Mh	Area ha	I	Axl	Accum Axl	T.C min	R mm/hr	Flow l/s	Size mm	Grade %	Capacity l/s	Velocity m/s	Length m	Time min	Total Time	% Load
															15.00		
STREET A	ST-1	ST-2	9.59	0.65	6.23	6.23	15.00	75.66	1310.41	1050	0.50	2014.32	2.25	73.69	0.54	15.54	65.1%
	ST-2	ST-3	0.00	0.65	0.00	6.23	15.54	74.32	1287.25	1050	0.50	2014.32	2.25	82.64	0.61	16.16	63.9%
	ST-7	ST-3	3.45	0.65	2.24	2.24	15.00	75.66	471.68	675	0.50	620.05	1.68	12.10	0.12	15.12	76.1%
	ST-3	ST-4	0.00	0.65	0.00	8.47	16.16	72.89	1716.20	1200	0.40	2572.29	2.20	66.07	0.50	16.66	66.7%
STREET A	ST-6	ST-5	8.06	0.65	5.24	5.24	15.00	75.66	1102.17	975	0.50	1653.11	2.14	20.40	0.16	15.16	66.7%
	ST-5	ST-4	0.00	0.65	0.00	5.24	15.16	75.27	1096.43	975	0.50	1653.11	2.14	17.23	0.13	15.29	66.3%
WET SWM OUTLET	ST-4	HW-100	21.10	0.65	13.72	13.72	16.66	71.75	2736.80	1350	0.50	3937.16	2.66	38.77	0.24	16.90	69.5%
STREET I	ST-8	Stormceptor	3.85	0.65	2.50	2.50	15.00	75.66	525.85	675	0.60	679.23	1.84	14.49	0.13	15.13	77.4%
DRY SWM OUTLET	Stormceptor	HW-200	0.00	0.65	0.00	2.50	15.13	75.33	523.57	675	0.60	679.23	1.84	6.30	0.06	15.19	77.1%

**121133 Kawartha Downs
Sanitary Sewer Sizing**

File: 121133

May 10, 2022

Average per Capita Daily Flow q = 450 L/day/capita
Population Density p = 3.5 ppu
M Min = 1.5
M Max = 3.8

Location	Cumulative # of Res Units	POP	Peaking Factor	Population Flow (L/s)	Pipe D (mm)	Grade (%)	Manning n	Capacity (l/s)	Full Flow Velocity (m/s)	Actual Velocity (m/s)	% Full	Capacity Check
SA-3 Into Pump Station	470	1645	3.65022	31.27404086	200	2.0%	0.013	46.37948	1.476301	0.854655	67.43%	FALSE
SA-5 to SA-4	168	588	3.8	11.6375	200	1.0%	0.013	32.79524	1.043903	0.670858	35.49%	FALSE
SA-4 TO SA-3	168	588	3.8	11.6375	200	0.5%	0.013	23.18974	0.738151	0.5209	50.18%	FALSE
SA-6 TO SA-3	98	343	3.8	6.788541667	200	0.5%	0.013	23.18974	0.738151	0.5209	29.27%	FALSE
SA-2 TO SA-3	204	714	3.8	14.13125	200	0.5%	0.013	23.18974	0.738151	0.5209	60.94%	FALSE
SA-1 TO SA-2	198	693	3.8	13.715625	200	0.5%	0.013	23.18974	0.738151	0.5209	59.15%	FALSE
FORCEMAIN	470	1645	3.65022	31.27404086	250	0.5%	0.013	42.04611	0.856554	0.509182	74.38%	FALSE
At SA-1	196	686	3.8	13.57708333	200	0.5%	0.013	23.18974	0.738151	0.5209	58.55%	FALSE
AT SA-6	97	339.5	3.8	6.719270833	200	0.5%	0.013	23.18974	0.738151	0.5209	28.98%	FALSE
AT SA-5	168	588	3.8	11.6375	200	0.5%	0.013	23.18974	0.738151	0.5209	50.18%	FALSE
Triangle Development Into	53	185.5	3.8	3.671354167	200	0.5%	0.013	23.18974	0.738151	0.5209	15.83%	FALSE
Forcemain Leaving Triangle	523	1830.5	3.61538	34.46846331	300	0.5%	0.013	68.37202	0.967264	0.502953	50.41%	FALSE

PROJECT Kawartha Downs
PROJECT # 121133
DATE Mar-22
Overland Flow Weir at Street A Low Point

OVERLAND FLOW

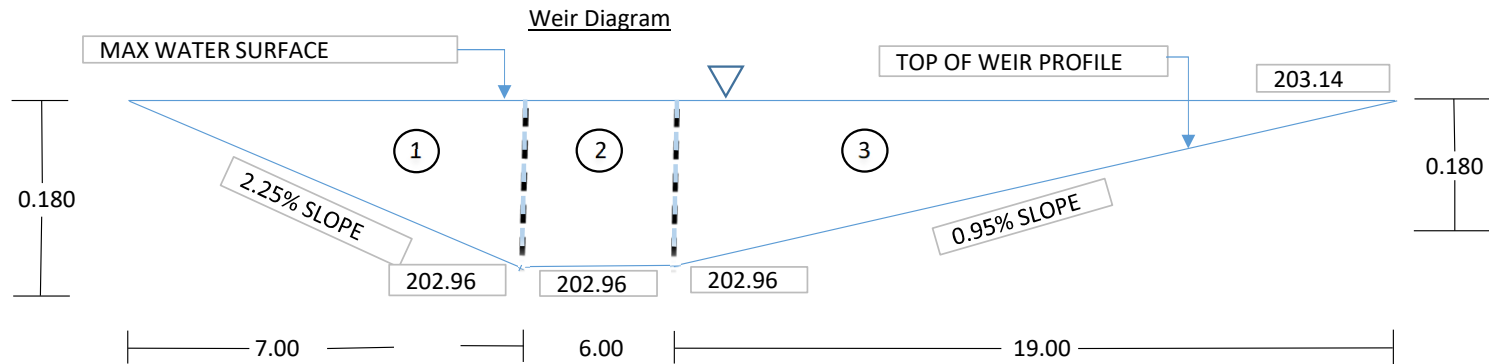
The overland flow weir is located east of the SWM Pond at the low point and should be sized to convey major flows from the subject property. The Visual Otthymo program (node 12 - Post-Dev Model) simulated the following flows:

$$Q_{100 \text{ yr}} = 5.52 \text{ m}^3/\text{sec}$$

$$Q_{5 \text{ yr}} = 3.04 \text{ m}^3/\text{sec}$$

$$Q_{\text{Major}} = 2.48 \text{ m}^3/\text{sec}$$

Therefore, the weir should be able to convey 2.48 m³/sec



Section 1

$$Q = \frac{2}{3} C_w B \sqrt{2g} \left(\frac{2}{3} h\right)^{3/2}$$

$$C_w = 0.577$$

$$B \text{ (width)} = 7.00 \text{ m}$$

$$h = 0.180 \text{ m}$$

$$Q_1 = 0.50 \text{ m}^3/\text{sec}$$

Section 2

$$Q = \frac{2}{3} C_w B \sqrt{2g} (h)^{3/2}$$

$$C_w = 0.577$$

$$B \text{ (width)} = 6.00 \text{ m}$$

$$h = 0.180 \text{ m}$$

$$Q_2 = 0.78 \text{ m}^3/\text{sec}$$

Section 3

$$Q = \frac{2}{3} C_w B \sqrt{2g} \left(\frac{2}{3} h\right)^{3/2}$$

$$C_w = 0.577$$

$$B \text{ (width)} = 19.00 \text{ m}$$

$$h = 0.180 \text{ m}$$

$$Q_3 = 1.35 \text{ m}^3/\text{sec}$$

$$Q_{\text{Total}} = 2.62 \text{ m}^3/\text{sec} > 2.48 \text{ m}^3/\text{sec}$$

Therefore, a weir that is 32.00 m long should have sufficient capacity to convey major flows.

PROJECT Kawartha Downs
PROJECT # 121133
DATE Mar-22
Overland Flow Weir at Street H Low Point

OVERLAND FLOW

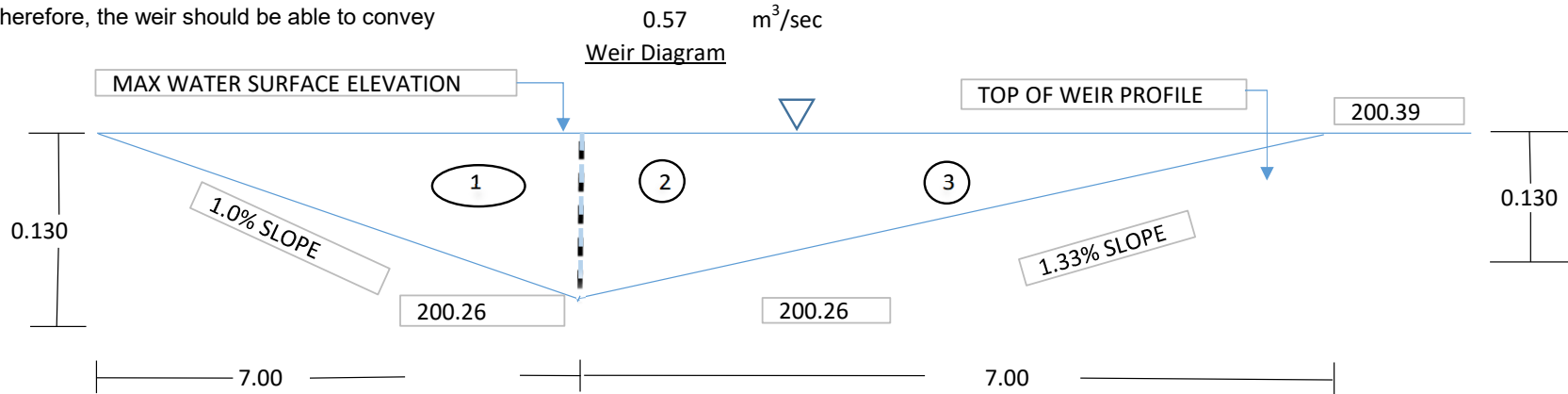
The overland flow weir is located east of the SWM Pond at the low point and should be sized to convey major flows from the subject property. The Visual Otthymo program (node 15 - Post-Dev Model) simulated the following flows:

$$Q_{100 \text{ yr}} = 1.22 \text{ m}^3/\text{sec}$$

$$Q_{5 \text{ yr}} = 0.65 \text{ m}^3/\text{sec}$$

$$Q_{\text{Major}} = 0.57 \text{ m}^3/\text{sec}$$

Therefore, the weir should be able to convey $0.57 \text{ m}^3/\text{sec}$



Section 1

$$Q = \frac{2}{3} C_w B \sqrt{2g} \left(\frac{2}{3} h \right)^{3/2}$$

$$C_w = 0.577$$

$$B \text{ (width)} = 7.00 \text{ m}$$

$$h = 0.130 \text{ m}$$

$$Q_1 = 0.30 \text{ m}^3/\text{sec}$$

$$Q = \frac{2}{3} C_w B \sqrt{2g} \left(\frac{2}{3} h \right)^{3/2}$$

Section 3

$$Q = \frac{2}{3} C_w B \sqrt{2g} \left(\frac{2}{3} h \right)^{3/2}$$

$$C_w = 0.577$$

$$B \text{ (width)} = 7.00 \text{ m}$$

$$h = 0.130 \text{ m}$$

$$Q_3 = 0.30 \text{ m}^3/\text{sec}$$

$$Q_{\text{Total}} = 0.61 \text{ m}^3/\text{sec} > 0.57 \text{ m}^3/\text{sec}$$

Therefore, a weir that is 14.00 m long should have sufficient capacity to convey major flows.

SCHEDULE 2

**-WET POND WATER QUALITY POND DESIGN
AND STAGE-STORAGE-DISCHARGE
CALCULATIONS**

**-DRY POND WATER QUALITY POND DESIGN
AND STAGE-STORAGE-DISCHARGE
CALCULATIONS**

**-POND OUTFALL CAPACITY CALCULATIONS
-TIME TO PEAK CALCULATIONS**

Kawartha Downs Wet Pond Calculations**Our File: 121133****May 30, 2022****POND VOLUME REQUIREMENTS**

IMPERVIOUS LEVEL	PERMANENT STORAGE VOLUME REQUIRED(m ³ /ha)	FLUCTUATING STORAGE VOLUME REQUIRED (m ³ /ha)	TOTAL DRAINAGE AREA (ha)	PERMANENT VOLUME REQUIRED (m ³)	FLUCTUATING VOLUME REQUIRED (m ³)
70%	185	40	0.000	0.00	0.00
65%	173	40	20.860	3608.78	834.40
60%	162	40	0.000	0.00	0.00
20%	20	40	0.830	16.60	33.20
Total			21.690	3625.38	867.60

IMPERVIOUS LEVEL	TOTAL RAINFALL (mm)	RUN-OFF DEPTH (mm)	TOTAL DRAINAGE AREA (ha)	VOLUME REQUIRED (m ³)
70%	25	0	0.000	0.00
65%	25	16.80	20.860	3504.48
60%	25	0	0.000	0.00
20%	25	7.53	0.830	62.50
Total			21.690	3566.98

Kawartha Downs Wet Pond Calculations
Our File: 121133
May 30, 2022

POND A FOREBAY CALCULATIONS

CONTRIBUTING AREA= 21.69 ha

Permanent Pool Required 3625 m³

Active Pool Required 3567 m³

Pond Characteristics

Permanent Pool Elevation= 199.50 m

Pond Invert Elevation= 198.50 m

Active Pool Elevation= 201.70 m

Permanent Pool Volume Provided 4236.70 m³

Active Pool Volume Provided 19424.26 m³

Orifice Sizing Calculations

From MOE Stormwater Management Practices Manual

$$t = \frac{2xA_p}{Cx A_o (2g)^{0.5}} \times (h_1^{0.5} - h_2^{0.5})$$

$$172800 = \frac{2 \times 10987.82}{0.61 \times A_o (2 \times 9.81)^{0.5}} \times (0.87^{0.5} - 0.00^{0.5})$$

$$A_o = \frac{11749.41}{172800 \times 2.70196262}$$

$$A_o = 0.025165 \text{ m}^2$$

t=Drawdown Time(s)

172800 s

A_p= Pond Area(@ Max WSE)=

10987.82 m²

C= Discharge Coefficient=

0.61

h₁=Max. head(m)

= 200.50 199.65

0.85 m

h₂=Min. head(m)

= 199.50 199.65

0.15 m

C/L Orifice=

199.65 m

g=Gravity=

9.81 m/s²

Orifice Diameter

$$\text{Dia} = \frac{4xA_o}{\pi}$$

$$\text{Dia} = 0.178999 \text{ m}$$

Kawartha Downs Wet Pond Calculations
Our File: 121133
May 30, 2022

Check Drawdown time

$$\text{Ave } Q = C \times A_o \times (2gh)^{0.5}$$

$$= 0.183819 \text{ m}^3/\text{s}$$

$$t = \frac{\text{Vol}}{Q}$$

$$= \frac{19424.26}{0.184} = 105671 \text{ s}$$

29.3529 hrs

D= Orifice Diameter	0.35 m
A _o = Orifice Area	0.096211 m ²
g=Gravity=	9.81 m/s ²
Average Head=	0.5 m
C= Discharge Coefficient=	0.61

Maximum Discharge

$$Q = C \times A_o \times (2gh)^{0.5}$$

$$= 0.2397 \text{ m}^3/\text{s}$$

D= Orifice Diameter	0.35 m
A _o = Orifice Area	0.09621 m ²
g=Gravity=	9.81 m/s ²
Maximum Head(h)=	0.85 m
C= Discharge Coefficient=	0.61

Equation 4.5 - Forebay Settling Length

$$\text{Distance} = \sqrt{\frac{r \times Q_p}{V_s}}$$

$$= \sqrt{\frac{0.47934121}{0.0003}}$$

$$= 40 \text{ m}$$

r=Length:Width Ratio	2 :1
Q _p =Orifice Peak Discharge=	0.2397 m ³ /s
V _s =Settling Velocity	0.0003 m/s

Equation 4.6 - Forebay Dispersion Length

$$\frac{8 \times Q}{d \times V_p}$$

$$= \frac{10.605205}{0.75}$$

$$= 14.1 \text{ m}$$

d=Depth of Forebay	1.5 m
V _p =Velocity in Forebay	0.5 m/s
Q= $\frac{CiA}{360}$ m ³ /s	1.325651 m ³ /s
Q (25mm4hr) =	0.55 m ³ /s
C=Runoff Coefficient	0.65
i=43xC+5.9	33.85 mm/hr
A=Area(ha)	21.690 ha

Equation 4.7 - Minimum Bottom Width

$$\text{Width} = \frac{\text{Distance}}{8}$$

$$= 1.7625 \text{ m}$$

Kawartha Downs Wet Pond Calculations**Our File: 121133****May 30, 2022****Annual Sediment Loadings**

Area (ha)	Sediment Factor (m3/ha)	Total Sediment (m3)
1.33	2.5	3.325
0.89	2.5	2.225
0.48	2.5	1.2
0.19	2.5	0.475
0.95	2.5	2.375
0.28	2.5	0.7
1.99	2.5	4.975
0.49	2.5	1.225
2.16	2.5	5.4
5.96	2.5	14.9
0.33	2.5	0.825
3.79	2.5	9.475
2.52	2.5	6.3
0.83	0	0
22.19		53.4

Kawartha Downs Wet Pond Calculations

Our File: 121133

May 30, 2022

Pond A Volmes and Discharge

Orifice 1

$$Q=CA(2gh)^{0.5}$$

Diameter= 0.200 m

Area= 0.0314 m²

C= 0.61 (PLATE)

C/L Elev= 199.65 m

Orifice 2

$$Q=CA(2gh)^{0.5}$$

Diameter= 0.400 m

Area= 0.1257 m²

C= 0.61 (PLATE)

C/L Elev= 200.00 m

Orifice 3

$$Q=CA(2gh)^{0.5}$$

Diameter= 0.200 m

Area= 0.0314 m²

C= 0.61 (PLATE)

C/L Elev= 199.65 m

Orifice 4

$$Q=CA(2gh)^{0.5}$$

Diameter= 0.400 m

Area= 0.1257 m²

C= 0.61 (PLATE)

C/L Elev= 200.00 m

	ELEV	AREA	AVERAGE AREA	DEPTH	VOLUME	TOTAL VOLUME	ORIFICE 1		ORIFICE 2		ORIFICE 3		ORIFICE 4		WEIR 1		TOTAL
	m	m ²	m ²	m	m ³	m ³	HEAD m	FLOW cms	HEAD m	FLOW cms	HEAD m	FLOW cms	HEAD m	FLOW cms	HEAD m	FLOW cms	FLOW cms
Permanent	198.50	3219.16				0.00											
Pool			3483.48	0.25	870.87												
	198.75	3747.80				870.87											
			4029.40	0.25	1007.35												
	199.00	4311.00				1878.22											
			4402.25	0.25	1100.56												
	199.25	4493.49				2978.78											
			5031.65	0.25	1257.91												
	199.50	5569.81				4236.70											

Fluctuating	199.50	5569.81				0.00	0.00	0.0000			0.00	0.0000					0.0000
Pool			6049.90	0.25	1536.67												
	199.75	6529.98				1536.67	0.10	0.0274			0.10	0.0274					0.0547
			7261.83	0.25	1786.41												
	200.00	7993.68				3323.08	0.35	0.0502	0.00	0.0000	0.35	0.0502	0.00	0.0000			0.1004
			8203.46	0.25	2050.87												
	200.25	8413.24				5373.95	0.60	0.0658	0.25	0.1698	0.60	0.0658	0.25	0.1698			0.4710
			8634.02	0.25	2158.50												
	200.50	8854.79				7532.45	0.85	0.0783	0.50	0.2401	0.85	0.0783	0.50	0.2401			0.6367
			9078.98	0.25	2269.74												
	200.75	9303.17				9802.20	1.10	0.0890	0.75	0.2940	1.10	0.0890	0.75	0.2940			0.7662
			9515.90	0.25	2378.97												
	201.00	9728.63				12181.17	1.35	0.0986	1.00	0.3395	1.35	0.0986	1.00	0.3395			0.8763
			9944.31	0.25	2486.08												
	201.25	10159.99				14667.25	1.60	0.1074	1.25	0.3796	1.60	0.1074	1.25	0.3796			0.9740
			10387.17	0.25	2596.79												
	201.50	10614.35				17264.04	1.85	0.1155	1.50	0.4158	1.85	0.1155	1.50	0.4158			1.0626
			10801.08	0.20	2160.22												
	201.70	10987.82				19424.26	2.05	0.1215	1.70	0.4427	2.05	0.1215	1.70	0.4427			1.1285

Kawartha Downs Wet Pond Calculations
Our File: 121133
May 30, 2022

Creek 4 Time to Peak Calculation

Station	Area	Time to Peak
St 1+000	5.65	0.156
St 1+400 1 of 2	10.22	0.382
St 1+400 2 of 2	9.34	0.212
St 1+400 Avg		0.301
St 1+800 1 of 2	22.97	0.718
St 1+800 2 of 2	9.47	0.337
St 1+800 Avg		0.607
St 2+100 1 of 2	8.6	0.262
St 2+100 2 of 2	39.9	0.964
St 2+100 Avg		0.8395

Creek 4 Time to Peak = $0.301+0.607+0.840$
Creek 4 Time to Peak = 1.748 hours

Creek 1 Time to Peak Calculation

Station	Area	Time to Peak
St 1+000 1 of 2	3.06	0.07294
St 1+000 2 of 2	4.013	0.2365
St 1+000 Avg		0.1657
ST 1+150 1 of 2	2.642	0.107
ST 1+150 2 of 2	5.059	0.2155
St 1+150 Avg		0.178
ST 1+300 1 of 2	3.693	0.226
ST 1+300 2 of 2	2.242	0.153
St 1+300 Avg		0.1984
St 1+500	5.435	0.261

Creek 1 Time to Peak = $0.1657+0.178+0.1984+0.261$
Creek 1 Time to Peak = 0.8031 hours
Creek 1 Area = 26.144 ha

Creek 2 Time to Peak Calculation

Station	Area	Time to Peak
St 1+000	1.911	0.0782
St 1+150	6.099	0.159
ST 1+300	7.324	0.1434
St 1+480	6.306	0.149

Creek 2 Time to Peak = 0.5296 hours

Kawartha Downs Dry Pond Calculations
 Our File: 121133
 May 30, 2022

NORTHEAST CORNER CULVERT AT MOORE DR & HWY 28 INTERSECTION

Pre-Development Flows

Area (ha) 9.189

Storm	Peak Flow (m ³ /s)
2 Year	0.187
5 Year	0.350
100 Year	0.973
10 Year	0.488
25 Year	0.658
50 Year	0.827
100 YR PB	1.440

Post-Development Flows w/ New Development

Storm	Peak Flow (m ³ /s)
2 Year	0.101
5 Year	0.195
100 Year	0.567
10 Year	0.281
25 Year	0.380
50 Year	0.484
100 YR PB	0.856

SOUTHEAST CULVERT ALONG HWY 28

Pre-Development Flows

Area (ha) 13.984

Storm	Peak Flow (m ³ /s)
2 Year	0.210
5 Year	0.402
100 Year	1.164
10 Year	0.576
25 Year	0.780
50 Year	0.991
100 YR PB	1.964

Post-Development Flows w/o New Development

Storm	Peak Flow (m ³ /s)	Available Flow (m ³ /s)
2 Year	0.139	0.071
5 Year	0.236	0.166
100 Year	0.592	0.572
10 Year	0.324	0.252
25 Year	0.416	0.364
50 Year	0.518	0.473
100 YR PB	0.783	1.181

Flows Leaving Dry SWM Pond

Storm	Peak Flow (m ³ /s)
2 Year	0.054
5 Year	0.070
100 Year	0.102
10 Year	0.081
25 Year	0.089
50 Year	0.097
100 YR PB	0.109

Post-Development Flows w/ New Development

Storm	Peak Flow (m ³ /s)	Available Flow (m ³ /s)
2 Year	0.193	0.017
5 Year	0.306	0.096
100 Year	0.694	0.470
10 Year	0.405	0.171
25 Year	0.505	0.275
50 Year	0.615	0.376
100 YR PB	0.892	1.072

May 30, 2022

Invert 198.950 m

Elevation (m)	End Area (m2)	Avg Area (m2)	Depth (m)	Volume (m3)	Total Volume (m3)
198.950	1849.000	1940.000	0.250	485.000	0.000
199.200	2031.000	2125.500	0.250	531.375	485.000
199.450	2220.000	2317.500	0.350	811.125	1016.375
199.800	2415.000				1827.500

Kawartha Downs Dry Pond Calculations

Our File: 121133

May 30, 2022

Orifice Discharge

			Elevation (m)	Head (m)	Discharge (m3/s)	Discharge (L/s)
Orifice Diameter:	325	mm				
Orifice Type:	PLATE		198.95	0.00	0.00000	0.00
Orifice Coeff	0.61		199.20	0.09	0.06630	66.30
Orifice Inv	198.95	m	199.45	0.34	0.13022	130.22
Centreline:	199.11	m	199.80	0.69	0.18585	185.85
X-Sectional Area:	0.082958	m2				
Gravity Constant	9.81	m/s2				

Orifice Discharge Equation

$$Q = 0.224149 \sqrt{H}$$

Note: Orifice Coefficient for PLATE orifice = 0.61

Orifice Coefficient for TUBE orifice = 0.80

Orifice Equation based on:

$$Q = C A \sqrt{2GH}$$

G = Gravitational Constant

H = Head (m)

A = X-Sectional Area (m2)

C = Orifice Coefficient

Kawartha Downs Dry Pond Calculations

Our File: 121133

May 30, 2022

Stage - Storage - Discharge

C/L Orifice: 199.11 m

Orifice Diameter: 325 mm plate

Elevation (m)	Head (m)	Surface Storage (m3)	Total Storage (m3)	Discharge (m3/s)	Total Storage (ha.m)
198.95	0.00	0	0.000	0.00000	0.00000
199.20	0.09	485.00	485.000	0.06630	0.04850
199.45	199.45	1016.375	1016.375	0.13022	0.10164
199.80	0.69	1827.5	1827.500	0.18585	0.18275

Kawartha Downs Dry Pond Calculations

Our File: 121133

May 30, 2022

Stage - Storage - Discharge

C/L Orifice: 199.11 m

Orifice Diameter: 325 mm plate

Elevation (m)	Head (m)	Surface Storage (m3)	Total Storage (m3)	Discharge (m3/s)	Total Storage (ha.m)
198.50	0.00	0	0.000	0.00000	0.00000
198.75	-0.36	318.3113375	318.311	0.06630	0.03183
199.00	199.00	684.5879625	684.588	0.13022	0.06846
199.25	0.14	1100.400713	1100.401	0.18585	0.11004
199.50	0.39	1567.320338	1567.320	0.00000	0.15673
199.75	0.64	2086.917588	2086.918	0.00000	0.20869

Kawartha Downs Dry Pond Calculations

Our File: 121133

May 30, 2022

Pond Storage

Quantity Controls

Invert 198.500 m

Elevation (m)	End Area (m2)	Avg Area (m2)	Depth (m)	Volume (m3)	Total Volume (m3)
199.000	1178.886				0.000
		1273.245	0.250	318.311	
199.250	1367.605				318.311
		1465.107	0.250	366.277	
199.500	1562.608				684.588
		1663.251	0.250	415.813	
199.750	1763.894				1100.401
		1867.679	0.250	466.920	
200.000	1971.463				1567.320
		2078.389	0.250	519.597	
200.250	2185.315				2086.918

PROJECT Kawartha Downs
PROJECT # 121133
DATE May 31/2022

North Outlet

Outfall Channel Flow Calculations-2 yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.560 0.162^{2/3} 0.005^{1/2}$$

$$Q = 0.336 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 0.599 \text{ m/s}$$

Channel Base Width=	2.2	m
Side Slope =	3	:1
Depth=	0.2	m
Manning's Coefficient	0.035	
Channel Slope	0.005	m/m
A=Area	0.560	m ²
P=Wetted Perimeter	3.465	m
R=Hydraulic Radius=A/P	0.162	m

Outfall Channel Flow Calculations-100yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.930 0.227^{2/3} 0.005^{1/2}$$

$$Q = 0.699 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 0.752 \text{ m/s}$$

Channel Base Width=	2.2	m
Side Slope =	3	:1
Depth=	0.3	m
Manning's Coefficient	0.035	
Channel Slope	0.005	m/m
A=Area	0.930	m ²
P=Wetted Perimeter	4.097	m
R=Hydraulic Radius=A/P	0.227	m

PROJECT Kawartha Downs
PROJECT # 121133
DATE Mar 18/2022

South Outlet

Outfall Channel Flow Calculations-2 yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.383 0.125^{2/3} 0.030^{1/2}$$

$$Q = 0.474 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 1.240 \text{ m/s}$$

Channel Base Width=	2.1	m
Side Slope =	3	:1
Depth=	0.15	m
Manning's Coefficient	0.035	
Channel Slope	0.03	m/m
A=Area	0.383	m ²
P=Wetted Perimeter	3.049	m
R=Hydraulic Radius=A/P	0.125	m

Outfall Channel Flow Calculations-100yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.368 0.125^{2/3} 0.030^{1/2}$$

$$Q = 0.454 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 1.235 \text{ m/s}$$

Channel Base Width=	2	m
Side Slope =	3	:1
Depth=	0.15	m
Manning's Coefficient	0.035	
Channel Slope	0.03	m/m
A=Area	0.368	m ²
P=Wetted Perimeter	2.949	m
R=Hydraulic Radius=A/P	0.125	m

PROJECT Kawartha Downs
PROJECT # 121133
DATE Mar 18/2022

Dry Pond

Outfall Channel Flow Calculations-2 yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.180 0.084^{2/3} 0.030^{1/2}$$

$$Q = 0.171 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 0.952 \text{ m/s}$$

Channel Base Width=	1.5	m
Side Slope =	3	:1
Depth=	0.1	m
Manning's Coefficient	0.035	
Channel Slope	0.03	m/m
A=Area	0.180	m ²
P=Wetted Perimeter	2.132	m
R=Hydraulic Radius=A/P	0.084	m

Outfall Channel Flow Calculations-100yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.230 0.087^{2/3} 0.030^{1/2}$$

$$Q = 0.224 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 0.974 \text{ m/s}$$

Channel Base Width=	2	m
Side Slope =	3	:1
Depth=	0.1	m
Manning's Coefficient	0.035	
Channel Slope	0.03	m/m
A=Area	0.230	m ²
P=Wetted Perimeter	2.632	m
R=Hydraulic Radius=A/P	0.087	m

PROJECT Kawartha Downs
PROJECT # 121133
DATE Mar 18/2022

Street A North Low Point Outlet

Outfall Channel Flow Calculations-2 yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.368 0.125^{2/3} 0.020^{1/2}$$

$$Q = 0.371 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 1.008 \text{ m/s}$$

Channel Base Width=	2	m
Side Slope =	3	:1
Depth=	0.15	m
Manning's Coefficient	0.035	
Channel Slope	0.02	m/m
A=Area	0.368	m ²
P=Wetted Perimeter	2.949	m
R=Hydraulic Radius=A/P	0.125	m

Outfall Channel Flow Calculations-100yr

$$Q = \frac{1}{n} A x R^{2/3} S^{1/2}$$

$$Q = \frac{1}{0.035} 0.520 0.159^{2/3} 0.020^{1/2}$$

$$Q = 0.617 \text{ m}^3/\text{s}$$

$$V = \frac{Q}{A}$$

$$V = 1.187 \text{ m/s}$$

Channel Base Width=	2	m
Side Slope =	3	:1
Depth=	0.2	m
Manning's Coefficient	0.035	
Channel Slope	0.02	m/m
A=Area	0.520	m ²
P=Wetted Perimeter	3.265	m
R=Hydraulic Radius=A/P	0.159	m

TIME TO PEAK CALCULATIONS

Feb. 4/22

KAWARTHA DOWNS

JOB #: 121133

PG Used

CULT. STRAIGHT
ROW.
(CSR)

ST 0 + 000 TO 0 + 150

AREA = 2642 ha CREEK 1 → ①

$$\frac{1}{2} \text{ SLOPE: } \frac{(203 - 198.25)}{231.178} = 2.055\%$$

0.275
0.34

$$V = 6.40 \text{ m/s (CSR)}$$

$$t_c = \frac{d}{V} = \frac{231.178}{6.40} = 577.945 \text{ s} = 0.1605 \text{ h}$$

$$t_p = \frac{2}{3}(0.16) = 0.107 \text{ h}$$

$$\frac{1}{2} \text{ SLOPE: } \frac{(209 - 198.25)}{477.09} = 2.25\%$$

AREA = 5.12 ha

$$V = 0.41 \text{ m/s (CSR)}$$

$$t_c = \frac{477.09}{0.41} = 1163.63 \text{ s} = 0.323 \text{ h}$$

$$t_p = 0.2155 \text{ h}$$

① ST 0 + 150 TO ST 0 + 300

$$\frac{1}{2} \text{ SLOPE: } \frac{(204 - 197.256)}{406.07} = 1.66\% \quad \text{AREA} = 3.75 \text{ ha}$$

$$V = 0.3325 \text{ m/s (CSR)}$$

$$t_c = \frac{406.07}{0.3325} = 1221.26 \text{ s} = 0.339 \text{ h} \quad t_p = 0.226 \text{ h}$$

$$\frac{1}{2} \text{ SLOPE: } \frac{(203 - 197.256)}{309.1085} = 1.86\%$$

$$V = 0.374 \text{ m/s (CSR)}$$

$$t_c = \frac{309.1085}{0.374} = 826.49 \text{ s} = 0.2296 \text{ h}$$

0.25
0.275

$$t_p = 0.153 \text{ h} \quad \text{AREA} = 2.242 \text{ ha}$$

① ST 0+300 TO 0+500 CREEK 1 → ①

$$\text{SLOPE} = \frac{200 - 196.351}{386.48} = 0.96\% \quad \text{AREA} = 5.53 \text{ ha}$$

$$V = 0.27 \text{ m/s (CSR)}$$

$$t_c = \frac{386.48}{0.27} = 1409.19 \text{ s} = 0.39 \text{ h} \quad t_p = 0.261 \text{ h}$$

$$\frac{0.485}{0.57}$$

①
121133

① ST 0+500 TO ST 0+614

$$\text{SLOPE} = \frac{216 - 195.58}{480.24} = 4.25\%$$

$$\text{AREA} = 9.720 \text{ ha}$$

$$V = 0.5725 \text{ m/s}$$

$$t_c = \frac{480.24}{0.5725} = 838.85 \text{ s} = 0.233 \text{ h}$$

$$t_p = 0.155 \text{ h}$$

PG USED
CULT STRAW.
(CSR)

② ST 0+000

CREEK 2 → ②

②

$$\text{SLOPE} = \frac{203 - 200.699}{144.73} = 1.59\%$$

$$\text{AREA} = 1.911 \text{ ha}$$

$$V = 0.743 \text{ m/s (CSR)}$$

$$t_c = \frac{144.73}{0.743} = 422.138 \text{ s} = 0.117 \text{ h} \quad t_p = 0.0782 \text{ h}$$

② ST 0+000 TO ST 0+150

$$\text{SLOPE} = \frac{209 - 198.769}{322.726} = 1.91\%$$

$$\text{AREA} = 6.099 \text{ ha}$$

$$V = 0.38 \text{ m/s (CSR)}$$

$$t_c = \frac{322.726}{0.38} = 857.174 \text{ s} = 0.238 \text{ h} \quad t_p = 0.159 \text{ h}$$

② ST 0+150 TO ST 0+300

$$\text{SLOPE} = \frac{209 - 197.145}{382.367} = 3.1\%$$

$$\text{AREA} = 7.324 \text{ ha}$$

$$V = 0.4935 \text{ m/s}$$

$$t_c = \frac{382.367}{0.4935} = 774.806 \text{ s} = 0.215 \text{ h} \quad t_p = 0.1434 \text{ h}$$

② ST 0+300 TO ST 0+480

$$\text{SLOPE} = \frac{213 - 196.254}{444.31} = 3.77\%$$

$$\text{AREA} = 6.306 \text{ ha}$$

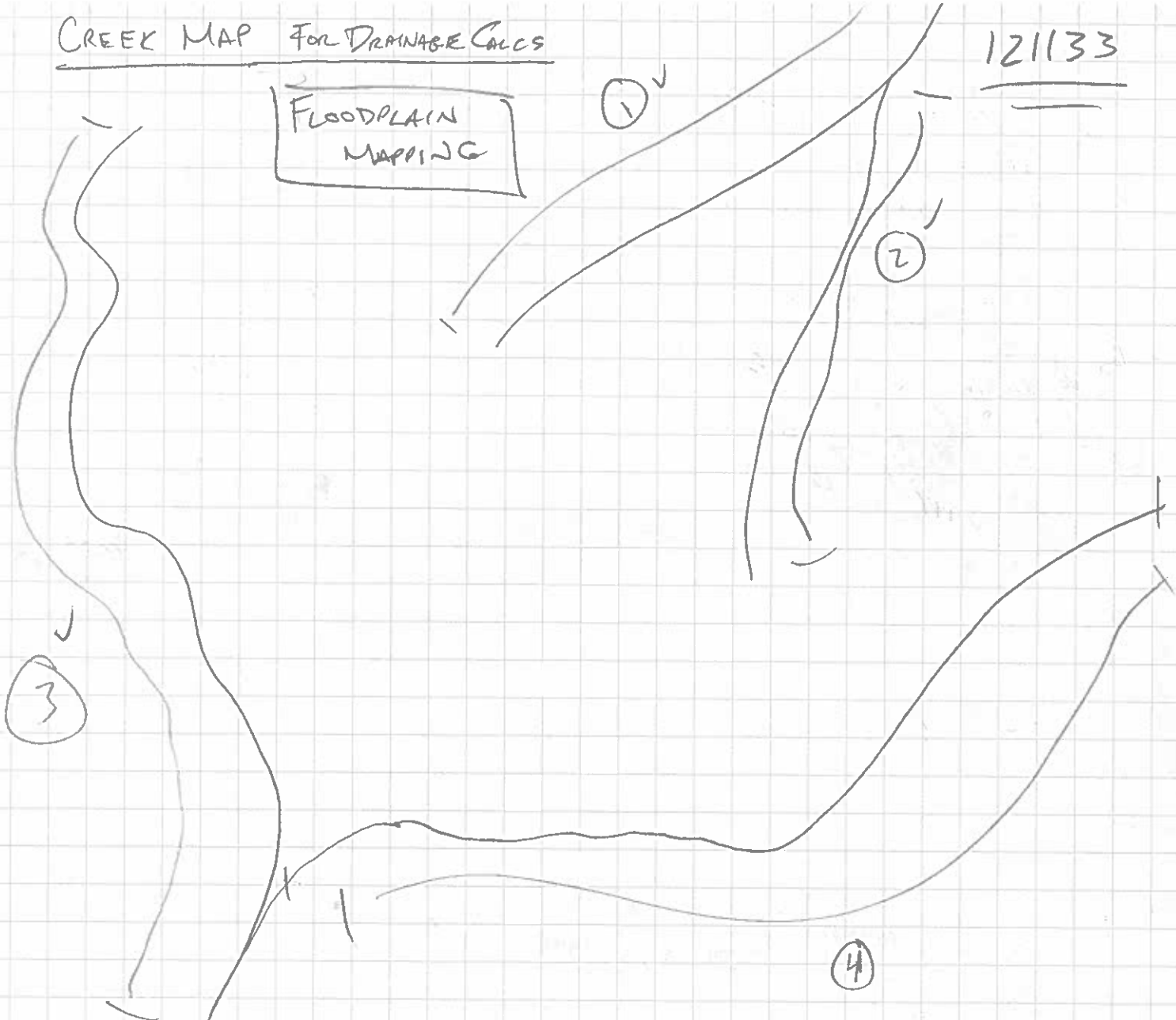
$$V = 0.55 \text{ m/s (CSR)}$$

$$t_c = \frac{444.31}{0.55} = 807.176 \text{ s} = 0.224 \text{ h} \quad t_p = 0.149 \text{ h}$$

CREEK MAP FOR DRAINAGE CALCS

121133

FLOODPLAIN
MAPPING



NE CREEK → CREEK 5 → (5)

ST 0+000 $A = 4.48 \text{ ha}$

Assume CSR.

$$\text{SLOPE} = \frac{215 - 204}{207.425} = 5.30\% ; v = 0.638 \text{ m/s}$$

$$t_c = 207.425 / 0.638 = 325.1175$$

$$t_c = 0.0903 \text{ h.}$$

$$t_p = 2/3(0.09) = 0.060 \text{ h}$$

STATIONS. 0+125 $A = 2.714 \text{ ha}$

Assume CSR.

$$\text{SLOPE} = \frac{214 - 202}{207.8692} = 5.77\% ; v = 0.6662 \text{ m/s. } t_p = 0.0578 \text{ h}$$

$$t_c = 207.8692 / 0.6662 = 312.5$$

$$= 0.08667 \text{ h}$$

ST 0+240.54 Assume CSR.

$$t_c = 156.1238 / 0.4863 = 321.045 = 0.0892 \text{ h}$$

$$\text{SLOPE} = \frac{205 - 200.18}{156.1238} = 3.09\%$$

$$t_p = 0.05945 \text{ h.}$$

$$A = 1.996 \text{ ha}$$

$$v = 0.4863 \text{ m/s.}$$

① 2 of 3 SOUTH DR. A

Area = 242.32 ha

USED Cult + Str. Row.

$$SLOPE = \frac{260.50 - 197.5}{3022.00} = 2.10\%$$

$$V = 0.410 \text{ m/s (Cult + Str. Row)}$$

$$t_c = \frac{3022}{0.41} = 7370.73 \text{ s} = 2.05 \text{ h} \quad t_p = \frac{2}{3} t_c = \underline{1.365 \text{ h}}$$

② 1 of 3 - SOUTH DR. A.

Area = 133.114 ha

$$S_L = \frac{209 - 199.6}{2634} = 0.38\%$$

$$V = 0.18 \text{ m/s (CSR)}$$

$$t_c = \frac{2634}{0.18} = 14633.33 \text{ s} = 4.06 \text{ h} ; \quad t_p = \underline{2.71 \text{ h}}$$

③ 3 of 3 - SOUTH DR. A.

A = 351.72 ha

$$S_L = \frac{242 - 196.5}{3428} = 1.33\%$$

$$V = 0.320 \text{ m/s (CSR)}$$

$$t_c = \frac{3428}{0.32} = 10712.50 \text{ s} = 2.98 \text{ h} ; \quad t_p = \underline{1.98 \text{ h}}$$

CULTIVATED STRAIGHT ROW
(CSR)

Creek 4

Area = 5.6524 ha

$$t_{cc} = \frac{427.716}{0.5032} = 849.54s = 0.2346h$$

$$t_p = 0.156h$$

④ ST 0+000 TO 0+400
 $S_{LOPE} = \frac{213 - 199}{424.9726} = 3.29\%$; $V = 0.5032m/s$ (CSR)
 $t_c = \frac{424.9726}{0.23} = 1847.70s = 0.513h$; $t_p = 0.382h$

④ ST 0+000 TO 0+400 1/2 AREA = 10.22 ha
 $S_{LOPE} = \frac{201.75 - 198.75}{471.6516} = 0.64\%$; $V = 0.23m/s$ (CSR)
 $t_c = \frac{471.6516}{0.23} = 2050.70s = 0.573h$; $t_p = 0.382h$

④ ST 0+400 TO 0+800 1/2 AREA = 22.97 ha
 $S_{LOPE} = \frac{201.75 - 198.50}{736.96} = 0.44\%$; $V = 0.149m/s$ (CSR)
 $t_c = \frac{736.96}{0.149} = 4945.74s = 1.374h$; $t_p = 0.718h$

④ ST 0+800 TO 1+200 1/2 AREA = 8.596 ha
 $S_{LOPE} = \frac{203 - 198.05}{423.15} = 1.17\%$; $V = 0.2987m/s$ (CSR)
 $t_c = \frac{423.15}{0.2987} = 1416.64s = 0.394h$; $t_p = 0.262h$

④ ST 1+200 TO ST 1+300
 $S_{LOPE} = \frac{203 - 197.84}{500.88} = 1.03\%$; $V = 0.2833m/s$ (CSR)

Area = 9.434 ha
 $t_c = \frac{500.88}{0.2833} = 1768.02s = 0.491h$; $t_p = 0.327h$

④ ST 1+300 TO 1+450 AREA = 6.912 ha
 $S_{LOPE} = \frac{203 - 197.188}{538.69} = 1.08\%$; $V = 0.2888m/s$ (CSR)

$t_c = \frac{538.69}{0.29} = 1857.55s = 0.516h$

$t_p = 0.345h$

④ ST 1+450 TO ST 1+737 1/2 AREA = 6.040 ha
 $S_{LOPE} = \frac{199 - 194.5}{499.7014} = 0.9\%$; $V = 0.2625m/s$ (CSR)

$t_c = \frac{499.7014}{0.2625} = 1903.62s = 0.52878h$

$t_p = 0.353h$

④ ST 1+450 TO 1+737 3/4 AREA = 6.295 ha

$S_{LOPE} = \frac{208 - 194.5}{499.5898} = 2.70\%$; $V = 0.453m/s$ (CSR)

$t_c = \frac{499.59}{0.453} = 1102.85s = 0.306h$; $t_p = 0.204h$

PG USED CULTIVATED STRAIGHT ROW (CSR)

③ ST 0+000 AREA = 32.9964 ha

SLOPE = $\frac{211.00 - 196.00}{515.50} = 2.910\%$ $V = 0.43 \text{ m/s (CSR)}$

$t_c = \frac{d}{V} = \frac{515.50}{0.43} = 1198.84 \text{ s} = 0.333 \text{ h}$ $t_p = 0.222 \text{ h}$

③ ST 0+000 TO ST 0+200 AREA = 11.67 ha

SLOPE = $\frac{(211.00 - 195.29)}{542.67} = 2.89\%$ $V = 0.44 \text{ m/s (CSR)}$

$t_c = \frac{542.67}{0.44} = 1227.20 \text{ s} = 0.341 \text{ h}$ $t_p = 0.227 \text{ h}$

③ ST 200 TO 01400 1/2 AREA = 4.5005 ha

SLOPE = $\frac{(208 - 194.51)}{373.6671} = 3.61\%$ $V = 0.51905 \text{ m/s (CSR)}$

$t_c = \frac{373.67}{0.519} = 719.97 \text{ s} = 0.200 \text{ h}$ $t_p = 0.133 \text{ h}$

③ ST 200 TO 0+400 2/2 AREA = 2.57 ha

SLOPE = $\frac{197 - 194.51}{308.7031} = 0.81\%$ $V = 0.250 \text{ m/s (CSR)}$

$t_c = \frac{308.7031}{0.250} = 1234.81 \text{ s} = 0.343 \text{ h}$

$t_p = \frac{2}{3} t_c = 0.229 \text{ h}$

③ ST 0+400 TO ST 0+600 1/2

AREA = 4.4025 ha SLOPE = $\frac{211 - 193.92}{545.4295} = 3.13\%$

$V = 0.4896 \text{ m/s (CSR)}$ $t_c = \frac{545.43}{0.4896} = 1114.03 \text{ s} = 0.309 \text{ h}$ $t_p = 0.206 \text{ h}$

③ ST 0+400 TO ST 0+600 2/2

AREA = 8.7795 ha SLOPE = $\frac{199 - 193.92}{550.5141} = 0.922\%$

$V = 0.265 \text{ m/s (CSR)}$ $t_c = \frac{550.51}{0.265} = 2077.41 \text{ s} = 0.577 \text{ h}$ $t_p = 0.3847 \text{ h}$

③ ST 0+600 TO 0+800 1/2 AREA = 13.5406

SLOPE = $\frac{211 - 193.66}{609.0858} = 2.85\%$ $V = 0.417 \text{ m/s (CSR)}$

$t_c = \frac{609.09}{0.417} = 1460.64 \text{ s} = 0.406 \text{ h}$ $t_p = 0.2705 \text{ h}$

③ ST 0+600 TO 0+800 2/2 AREA = 4.7705 ha

SLOPE = $\frac{198 - 193.66}{547.248} = 0.793\%$ $V = 0.23965 \text{ m/s (CSR)}$

$t_c = \frac{547.248}{0.23965} = 2283.53 \text{ s} = 0.634 \text{ h}$ $t_p = 0.4229 \text{ h}$

③ ST 0+800 TO 0+998 1/2 AREA = 5.982 ha

SLOPE = $\frac{205 - 193.40}{450.23} = 2.58\%$ $V = 0.440 \text{ m/s (CSR)}$

$t_c = \frac{450.23}{0.440} = 1023.25 \text{ s} = 0.284 \text{ h}$ $t_p = 0.189 \text{ h}$

③ ST 0+800 TO 0+998 2/2 AREA = 18.74 ha

SLOPE = $\frac{209 - 193.40}{497.0791} = 3.14\%$ $V = 0.490 \text{ m/s (CSR)}$

$t_c = \frac{497.0791}{0.49} = 1014.45 \text{ s} = 0.282 \text{ h}$ $t_p = 0.188 \text{ h}$

③ ST 0+998 TO ST 1+158 1/2 AREA = 10.089 ha

SLOPE = $\frac{206 - 193.20}{620.9914} = 2.06\%$ $V = 0.40 \text{ m/s (CSR)}$

$t_c = \frac{620.9914}{0.40} = 1552.48 \text{ s} = 0.431 \text{ h}$ $t_p = 0.287 \text{ h}$

③ ST 0+998 TO ST 1+158 2/2 AREA = 4.979 ha

SLOPE = $\frac{207 - 193.20}{369.63} = 3.732\%$ $V = 0.5216 \text{ m/s (CSR)}$

$t_c = \frac{369.63}{0.5216} = 708.646 \text{ s} = 0.1968 \text{ h}$ $t_p = 0.131 \text{ h}$

PG. USED CULTIVATED
STR. ROW.

For v use cultivated straight row (CSR)

Creek-6

ST 0+000 $\rightarrow$ 1 of 2 $A = 2.435 \text{ ha}$

$$\text{Slope} = \frac{206 - 199.252}{236.8789} = 2.85\% ; v = 0.4665 \text{ m/s (from Chart; CSR)}$$

$$t_c = \frac{236.8789}{0.4665} = 507.78 \text{ s} = 0.141 \text{ h} ; t_p = \frac{2}{3}(0.141) = 0.09403 \text{ h}$$

ST 0+000 $\rightarrow$ 2 of 2 $A = 1.237 \text{ ha}$

$$\text{Slope} = \frac{206 - 199.252}{127.353} = 0.587\% ; v = 0.2077 \text{ m/s (CSR)}$$

$$t_c = \frac{127.353}{0.2077} = 613.158 \text{ s} = 0.170 \text{ h} ; t_p = \frac{2}{3}(0.170) = 0.1135 \text{ h}$$

ST 0+125 $\rightarrow$ 1 of 2 $A = 3.4777 \text{ ha}$

$$\text{Slope} = \frac{206 - 197.82}{302.7936} = 2.705\% ; v = 0.360 \text{ m/s (CSR)}$$

$$t_c = \frac{302.7936}{0.360} = 841.093 \text{ s} = 0.2336 \text{ h} ; t_p = 0.1558 \text{ h}$$

ST 0+125 $\rightarrow$ 2 of 2 $A = 1.7395 \text{ ha}$

$$\text{Slope} = \frac{201 - 197.82}{207.1656} = 1.54\% ; v = 0.3348 \text{ m/s (CSR)}$$

$$t_c = \frac{207.1656}{0.3348} = 618.77 \text{ s} = 0.172 \text{ h} ; t_p = 0.1146 \text{ h}$$

ST 0+176.18 $\rightarrow$ 1 of 2 $A = 3.2987 \text{ ha}$

$$\text{Slope} = \frac{206 - 197.19}{363.7694} = 2.42\% ; v = 0.4278 \text{ m/s (CSR)}$$

$$t_c = \frac{363.7694}{0.4278} = 850.326 \text{ s} = 0.236 \text{ h} ; t_p = 0.15747 \text{ h}$$

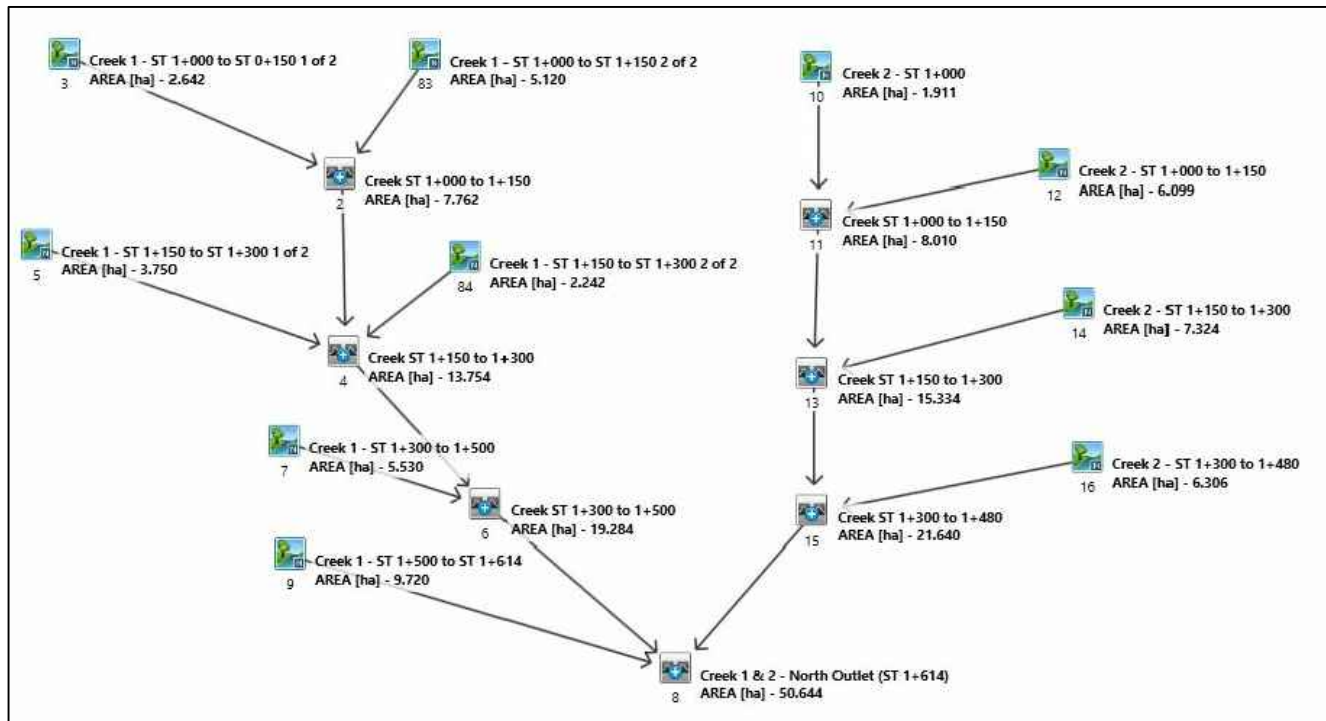
ST 0+176.18 $\rightarrow$ 2 of 2 $A = 1.8023 \text{ ha}$

$$\text{Slope} = \frac{201.44 - 197.19}{226.59} = 1.88\% ; v = 0.3756 \text{ m/s (CSR)}$$

$$t_c = \frac{226.59}{0.3756} = 603.27 \text{ s} = 0.1676 \text{ h} ; t_p = 0.1117 \text{ h}$$

SCHEDULE 3

- VISUAL OTTHYMO 6.0 SCHEMATICS AND OUTPUT FILES



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEKS 1 & 2



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905)576-8500 • FAX (905)576-9730

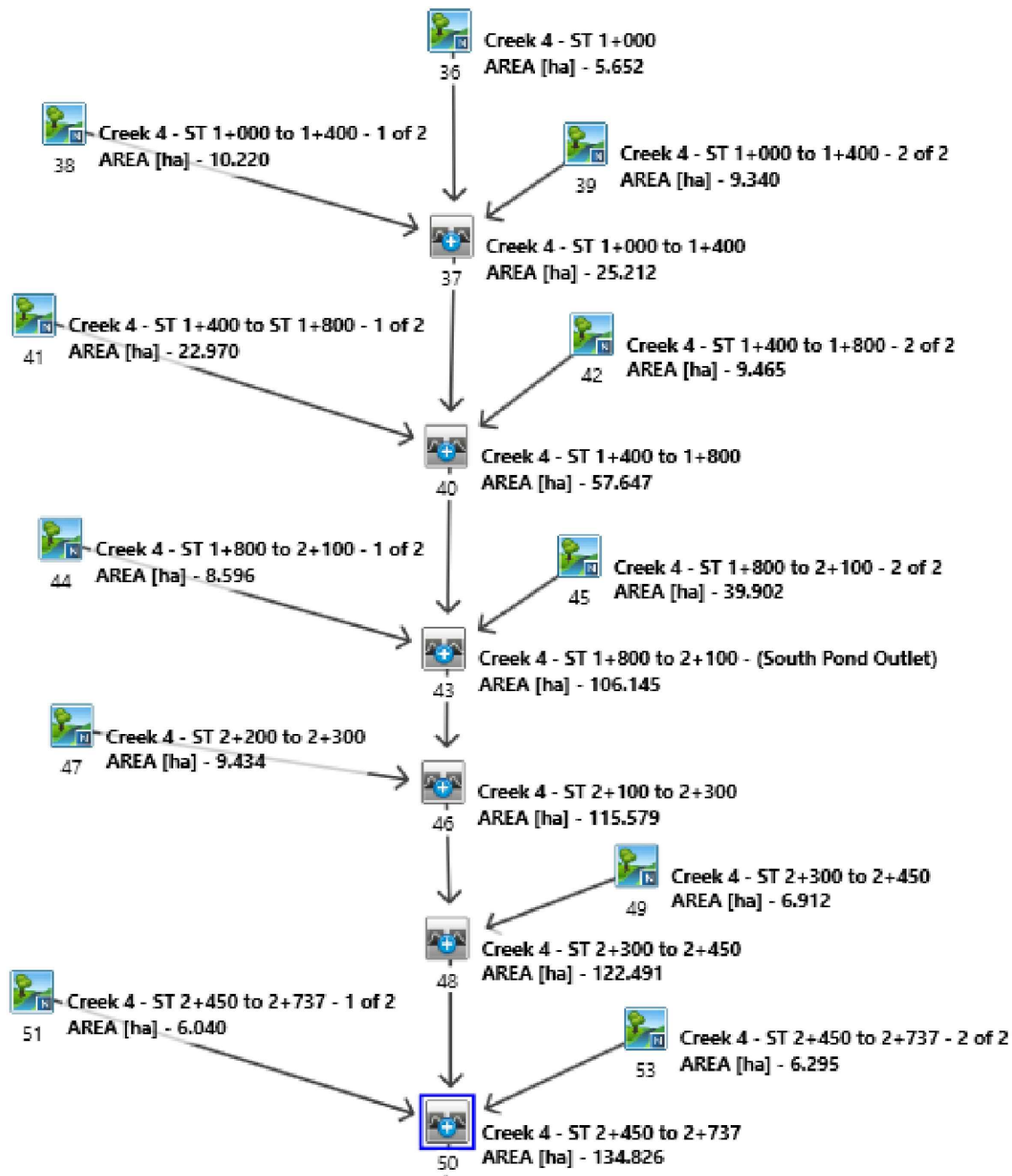
info@dgbiddle.com

SCALE N.T.S.
DRAWN M.H.
DESIGN M.H.
CHECKED F.H.V.
DATE MAY 2022

PROJECT
121133

DWG

FIG 2



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEK 4



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905)576-8500 • FAX (905)576-9730

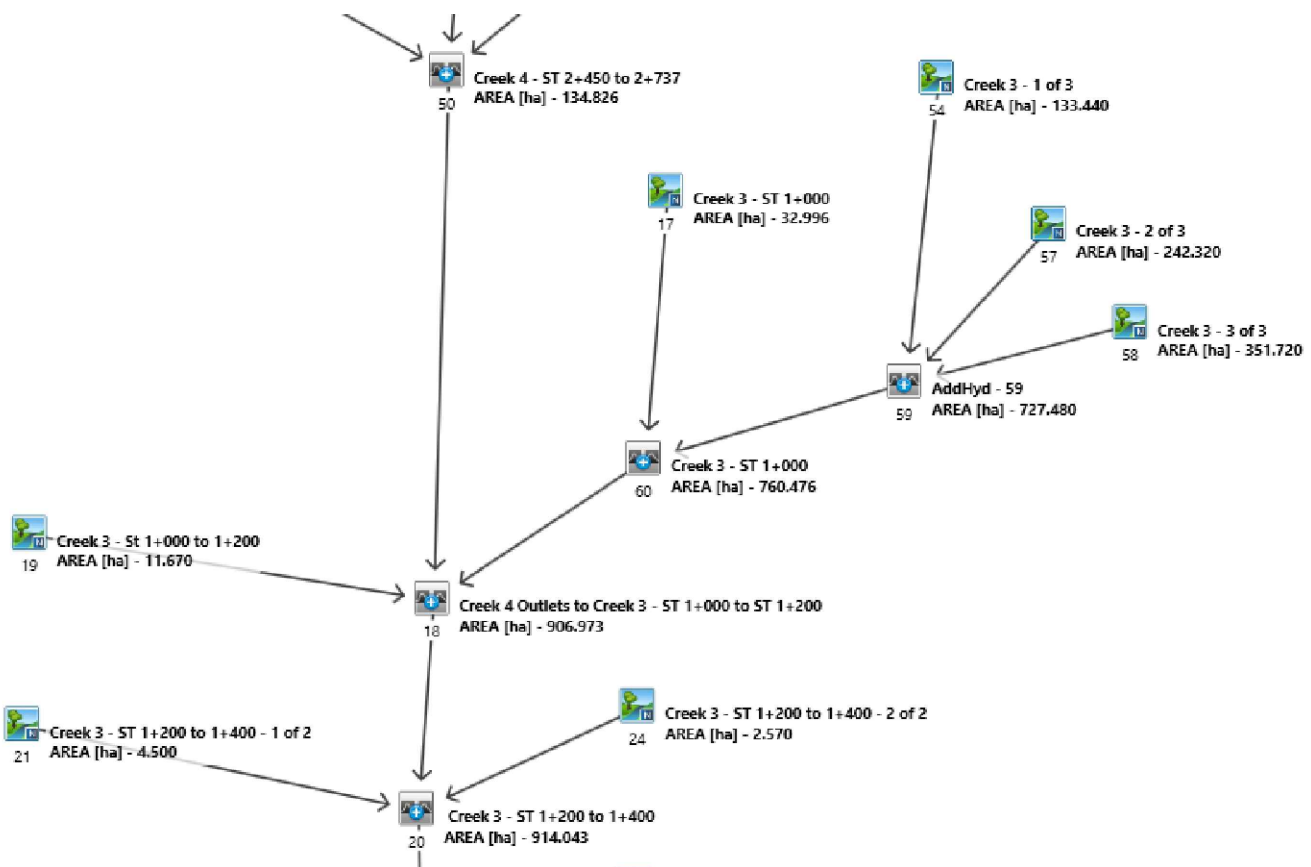
info@dgbiddle.com

SCALE N.T.S.
DRAWN M.H.
DESIGN M.H.
CHECKED F.H.V.
DATE MAY 2022

PROJECT
121133

DWG

FIG 3



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28
 VISUAL OTTHYMO SCHEMATIC – CREEK 4
 OUTLET TO CREEK 3



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
 PHONE (905)576-8500 • FAX (905)576-9730
 info@dgbiddle.com

SCALE N.T.S.
 DRAWN M.H.
 DESIGN M.H.
 CHECKED F.H.V.
 DATE MAY 2022

PROJECT
 121133

DWG

FIG 4



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEK 3



D.G. Biddle & Associates Limited

consulting engineers and planners

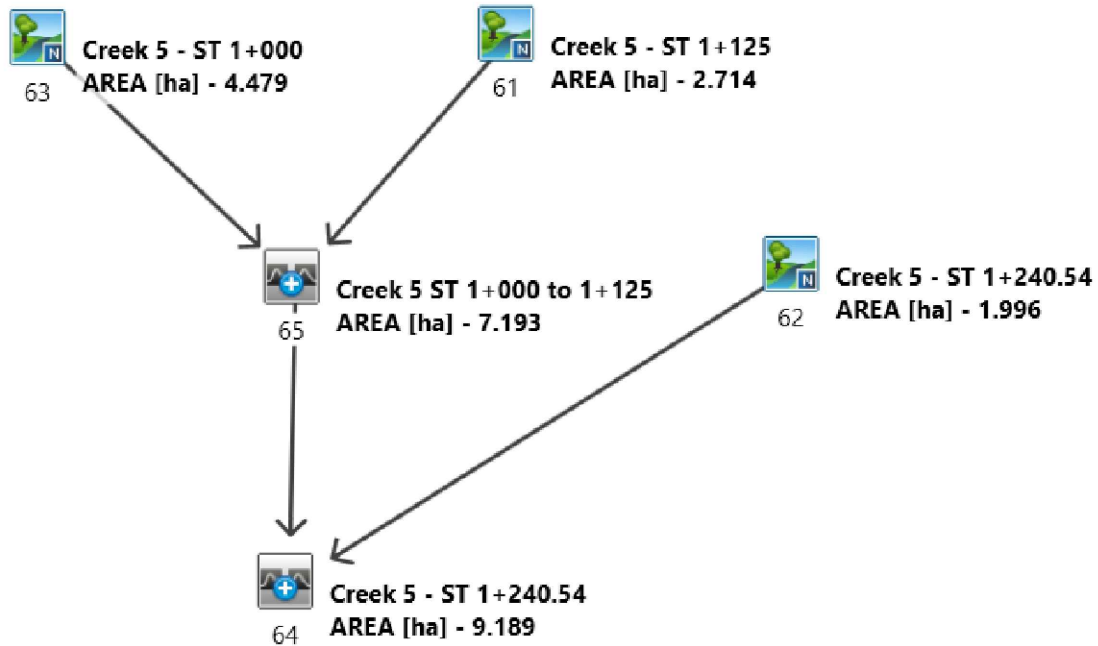
96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905) 576-8500 • FAX (905) 576-9730
info@dgbiddle.com

SCALE N.T.S.
DRAWN M.H.
DESIGN M.H.
CHECKED F.H.V.
DATE MAY 2022

PROJECT
121133

DWG

FIG 5



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEK 5



D.G. Biddle & Associates Limited

consulting engineers and planners

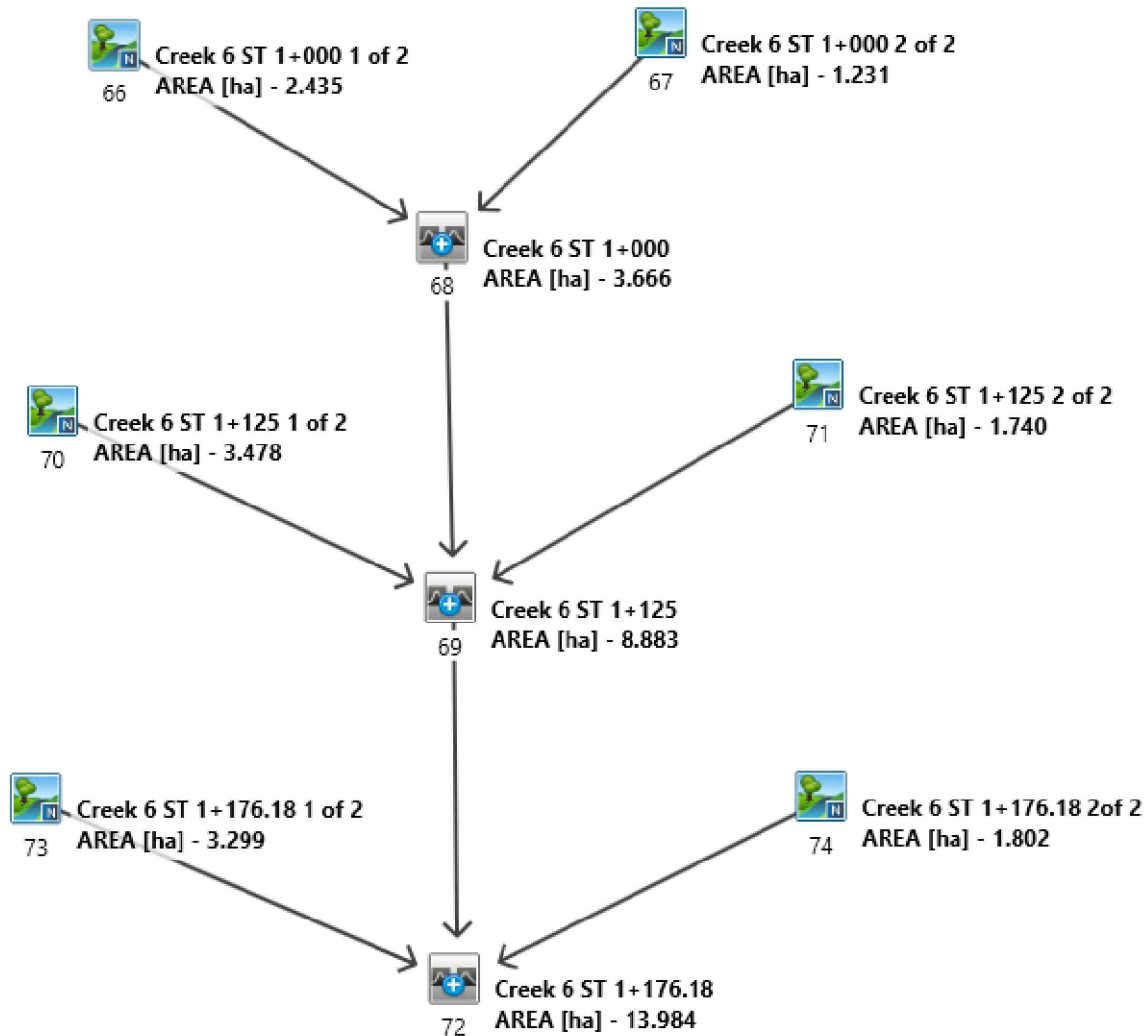
96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905) 576-8500 • FAX (905) 576-9730
info@dgbiddle.com

SCALE N.T.S.
DRAWN M.H.
DESIGN M.H.
CHECKED F.H.V.
DATE MAY 2022

PROJECT
121133

DWG

FIG 6



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEK 6



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905) 576-8500 • FAX (905) 576-9730
info@dgbiddle.com

SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
M.H.
M.H.
F.H.V.
MAY 2022

PROJECT
121133

DWG

FIG 7

=====

V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U A A A L L
V V I SS U U A A L L
W I SSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

Creek 1 - 6 Flows

***** 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\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\ac8c
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\ac8c

DATE: 05/31/2022 TIME: 04:04:11

USER:

COMMENTS: _____

** SIMULATION : Cavan 10 Year Storm **

CHICAGO STORM | IDF curve parameters: A=1560.000
Ptotal= 53.50 mm | B= 13.000
C= 0.860
used in: INTENSITY = A / (t + B)^C
Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.91	1.00	33.34	2.00	8.57	3.00	3.62
0.17	3.45	1.17	105.21	2.17	7.00	3.17	3.62
0.33	4.24	1.33	43.73	2.33	5.91	3.33	3.30
0.50	5.50	1.50	22.99	2.50	5.10	3.50	2.80
0.67	7.78	1.67	15.02	2.67	4.49	3.67	2.61
0.83	12.98	1.83	10.97	2.83	4.01	3.83	2.44

CALIB |
NASHYD (0003) | Area (ha)= 2.64 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.11

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.118 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.438
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.232

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

CALIB |
NASHYD (0083) | Area (ha)= 5.12 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.179 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.678
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

(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 (0003): 2.64 0.118 1.42 12.44
+ ID2= 2 (0083): 5.12 0.179 1.58 12.68
ID = 3 (0002): 7.76 0.281 1.50 12.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
NASHYD (0005) | Area (ha)= 3.75 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.23

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.128 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.681
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB			
NASHYD (0084)	Area (ha)= 2.24	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.15		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.091 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.628
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

ADD HYD (0004)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	7.76	0.281	1.50	12.60
+ ID2= 2 (0005):	3.75	0.128	1.58	12.68
ID = 3 (0004):	11.51	0.402	1.50	12.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	11.51	0.402	1.50	12.62
+ ID2= 2 (0084):	2.24	0.091	1.50	12.63
ID = 1 (0004):	13.75	0.493	1.50	12.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0007)	Area (ha)= 5.53	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

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

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

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.175 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 12.688
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

(i) 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 (0004):	13.75	0.493	1.50	12.62
+ ID2= 2 (0007):	5.53	0.175	1.67	12.69
ID = 3 (0006):	19.28	0.648	1.58	12.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0009)	Area (ha)= 9.72	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.16		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.392 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.632
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

CALIB			
NASHYD (0010)	Area (ha)= 1.91	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.08		

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

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

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.099 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 11.920
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.223

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

CALIB							
NASHYD	(0012)	Area	(ha)=	6.10	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.16				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.244 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.638
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

ADD HYD (0011)							
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.			
	(ha)	(cms)	(hrs)	(mm)			
ID1= 1 (0010):	1.91	0.099	1.33	11.92			
+ ID2= 2 (0012):	6.10	0.244	1.50	12.64			
ID = 3 (0011):	8.01	0.317	1.50	12.47			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD	(0014)	Area	(ha)=	7.32	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.14				

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

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

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.302 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.609
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

ADD HYD (0013)							
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.			
	(ha)	(cms)	(hrs)	(mm)			
ID1= 1 (0011):	8.01	0.317	1.50	12.47			
+ ID2= 2 (0014):	7.32	0.302	1.50	12.61			
ID = 3 (0013):	15.33	0.619	1.50	12.53			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD	(0016)	Area	(ha)=	6.31	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.15				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.257 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.621
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

ADD HYD (0015)							
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.			
	(ha)	(cms)	(hrs)	(mm)			
ID1= 1 (0013):	15.33	0.619	1.50	12.53			
+ ID2= 2 (0016):	6.31	0.257	1.50	12.62			
ID = 3 (0015):	21.64	0.876	1.50	12.56			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0015):	21.64	0.876	1.50	12.56	
+ ID2= 2 (0006):	19.28	0.648	1.58	12.64	
=====					
ID = 3 (0008):	40.92	1.523	1.50	12.60	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0008):	40.92	1.523	1.50	12.60	
+ ID2= 2 (0009):	9.72	0.392	1.50	12.63	
=====					
ID = 1 (0008):	50.64	1.915	1.50	12.61	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				Area (ha)= 33.00		Curve Number (CN)= 65.0	
NASHYD (0017)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.22			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 1.135 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.680
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB				Area (ha)= 133.44		Curve Number (CN)= 65.0	
NASHYD (0054)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 2.71			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 0.867 (i)
TIME TO PEAK (hrs)= 4.667
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB				Area (ha)= 242.32		Curve Number (CN)= 65.0	
NASHYD (0057)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 1.36			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 2.663 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB				Area (ha)= 351.72		Curve Number (CN)= 65.0	
NASHYD (0058)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 1.98			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 2.927 (i)
TIME TO PEAK (hrs)= 3.917
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0059)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0054):	133.44	0.867	4.67	12.70
+ ID2= 2 (0057):	242.32	2.663	3.08	12.70
=====				
ID = 3 (0059):	375.76	3.294	3.33	12.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0059):	375.76	3.294	3.33	12.70
+ ID2= 2 (0058):	351.72	2.927	3.92	12.70
=====				
ID = 1 (0059):	727.48	6.129	3.58	12.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	33.00	1.135	1.58	12.68
+ ID2= 2 (0059):	727.48	6.129	3.58	12.70
=====				
ID = 3 (0060):	760.48	6.262	3.58	12.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0019)
ID= 1 DT= 5.0 min

Area (ha)=	11.67	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.23		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 0.397 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.682
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB
NASHYD (0036)
ID= 1 DT= 5.0 min

Area (ha)=	5.65	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.16		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.228 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.633
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

CALIB
NASHYD (0038)
ID= 1 DT= 5.0 min

Area (ha)=	10.22	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.38		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.262 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 12.694
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB
NASHYD (0039)
ID= 1 DT= 5.0 min

Area (ha)=	9.34	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.21		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.328 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.677
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0037)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0036):	5.65	0.228	1.50	12.63	
+ ID2= 2 (0038):	10.22	0.262	1.83	12.69	
=====					
ID = 3 (0037):	15.87	0.423	1.67	12.67	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0037):	15.87	0.423	1.67	12.67	
+ ID2= 2 (0039):	9.34	0.328	1.58	12.68	
=====					
ID = 1 (0037):	25.21	0.750	1.58	12.67	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0041)		Area (ha)=		22.97	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia (mm)=		5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.72	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.395 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB			
NASHYD (0042)		Area (ha)=	9.47
ID= 1 DT= 5.0 min		Ia (mm)=	5.00
		U.H. Tp(hrs)=	0.34
		Curve Number (CN)=	65.0
		# 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	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.261 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.693
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0040)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0037):	25.21	0.750	1.58	12.67	
+ ID2= 2 (0041):	22.97	0.395	2.25	12.70	
=====					
ID = 3 (0040):	48.18	0.947	1.67	12.68	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0040):	48.18	0.947	1.67	12.68	
+ ID2= 2 (0042):	9.47	0.261	1.75	12.69	
=====					
ID = 1 (0040):	57.65	1.206	1.75	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0044)	Area (ha)=	8.60	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.26	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.271 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 12.688
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB
NASHYD (0045) | Area (ha)= 39.90 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.96

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 0.561 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

----- TRANSFORMED HYETOGRAPH -----					
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57
0.167	2.91	1.167	33.34	2.167	8.57
0.250	3.45	1.250	105.21	2.250	7.00
0.333	3.45	1.333	105.21	2.333	7.00
0.417	4.24	1.417	43.73	2.417	5.91
0.500	4.24	1.500	43.73	2.500	5.91
0.583	5.50	1.583	22.99	2.583	5.10
0.667	5.50	1.667	22.99	2.667	5.10
0.750	7.78	1.750	15.02	2.750	4.49
0.833	7.78	1.833	15.02	2.833	4.49
0.917	12.98	1.917	10.97	2.917	4.01
1.000	12.98	2.000	10.97	3.000	4.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- TRANSFORMED HYETOGRAPH -----					
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57
0.167	2.91	1.167	33.34	2.167	8.57
0.250	3.45	1.250	105.21	2.250	7.00
0.333	3.45	1.333	105.21	2.333	7.00
0.417	4.24	1.417	43.73	2.417	5.91
0.500	4.24	1.500	43.73	2.500	5.91
0.583	5.50	1.583	22.99	2.583	5.10
0.667	5.50	1.667	22.99	2.667	5.10
0.750	7.78	1.750	15.02	2.750	4.49
0.833	7.78	1.833	15.02	2.833	4.49
0.917	12.98	1.917	10.97	2.917	4.01
1.000	12.98	2.000	10.97	3.000	4.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0047) | Area (ha)= 9.43 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.33

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.264 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.693
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

----- TRANSFORMED HYETOGRAPH -----					
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57
0.167	2.91	1.167	33.34	2.167	8.57
0.250	3.45	1.250	105.21	2.250	7.00
0.333	3.45	1.333	105.21	2.333	7.00
0.417	4.24	1.417	43.73	2.417	5.91
0.500	4.24	1.500	43.73	2.500	5.91
0.583	5.50	1.583	22.99	2.583	5.10
0.667	5.50	1.667	22.99	2.667	5.10
0.750	7.78	1.750	15.02	2.750	4.49
0.833	7.78	1.833	15.02	2.833	4.49
0.917	12.98	1.917	10.97	2.917	4.01
1.000	12.98	2.000	10.97	3.000	4.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0049) | Area (ha)= 6.91 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.34

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.188 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.693
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

----- TRANSFORMED HYETOGRAPH -----					
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57
0.167	2.91	1.167	33.34	2.167	8.57
0.250	3.45	1.250	105.21	2.250	7.00
0.333	3.45	1.333	105.21	2.333	7.00
0.417	4.24	1.417	43.73	2.417	5.91
0.500	4.24	1.500	43.73	2.500	5.91
0.583	5.50	1.583	22.99	2.583	5.10
0.667	5.50	1.667	22.99	2.667	5.10
0.750	7.78	1.750	15.02	2.750	4.49
0.833	7.78	1.833	15.02	2.833	4.49
0.917	12.98	1.917	10.97	2.917	4.01
1.000	12.98	2.000	10.97	3.000	4.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0051) | Area (ha)= 6.04 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.35

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.162 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.694
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB							
NASHYD (0053)	Area (ha)=	6.30	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.20					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.224 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.674
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0050)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0048):	122.49	2.180	1.75	12.69	
+ ID2= 2 (0051):	6.04	0.162	1.75	12.69	
ID = 3 (0050):	128.53	2.342	1.75	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0050):	128.53	2.342	1.75	12.69	
+ ID2= 2 (0053):	6.30	0.224	1.58	12.67	
ID = 1 (0050):	134.83	2.526	1.75	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0019):	11.67	0.397	1.58	12.68	
+ ID2= 2 (0050):	134.83	2.526	1.75	12.69	
ID = 3 (0018):	146.50	2.875	1.75	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0018):	146.50	2.875	1.75	12.69	
+ ID2= 2 (0060):	760.48	6.262	3.58	12.70	
ID = 1 (0018):	906.97	7.302	3.25	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0021)	Area (ha)=	4.50	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.13					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.188 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.581
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.235

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

CALIB							
NASHYD (0024)	Area (ha)=	2.57	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.23					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.087 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.682
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0020)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0018):	906.97	7.302	3.25	12.69	
+ ID2= 2 (0021):	4.50	0.188	1.42	12.58	
=====					
ID = 3 (0020):	911.47	7.322	3.25	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0020):	911.47	7.322	3.25	12.69	
+ ID2= 2 (0024):	2.57	0.087	1.58	12.68	
=====					
ID = 1 (0020):	914.04	7.334	3.25	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	4.40	Curve Number (CN)=	65.0
NASHYD (0023)	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.21		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.156 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 12.675
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB			
NASHYD (0025)	Area (ha)=	10.27	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38	

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

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

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.262 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 12.695
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0022)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0020):	914.04	7.334	3.25	12.69	
+ ID2= 2 (0023):	4.40	0.156	1.58	12.67	
=====					
ID = 3 (0022):	918.45	7.355	3.25	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0022):	918.45	7.355	3.25	12.69	
+ ID2= 2 (0025):	10.27	0.262	1.83	12.69	
=====					
ID = 1 (0022):	928.72	7.417	3.25	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0027)	Area (ha)=	13.51	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.27	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.420 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 12.689
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB					
NASHYD (0028)	Area (ha)=	4.77	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.42			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.115 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 12.695
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0026)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0022):	928.72	7.417	3.25	12.69	
+ ID2= 2 (0027):	13.51	0.420	1.67	12.69	
ID = 3 (0026):	942.23	7.486	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0026):	942.23	7.486	3.17	12.69	
+ ID2= 2 (0028):	4.77	0.115	1.83	12.69	
ID = 1 (0026):	947.00	7.520	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0030)	Area (ha)=	5.98	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.19			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.220 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.666
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB					
NASHYD (0031)	Area (ha)=	18.74	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.19			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 0.693 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.666
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0029)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0026):	947.00	7.520	3.17	12.69	
+ ID2= 2 (0030):	5.98	0.220	1.50	12.67	
ID = 3 (0029):	952.98	7.549	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0029):	952.98	7.549	3.17	12.69	
+ ID2= 2 (0031):	18.74	0.693	1.50	12.67	
ID = 1 (0029):	971.72	7.640	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0034)	Area (ha)=	10.09	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.29			

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

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

0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.304 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 12.691
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

CALIB							
NASHYD	(0035)	Area	(ha)=	4.98	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.13				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.210 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.574
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.235

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

ADD HYD (0033)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0029):	971.72	7.640	3.17	12.69	
+ ID2= 2 (0034):	10.09	0.304	1.67	12.69	
ID = 3 (0033):	981.81	7.695	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)					
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0033):	981.81	7.695	3.17	12.69	
+ ID2= 2 (0035):	4.98	0.210	1.42	12.57	
ID = 1 (0033):	986.79	7.718	3.17	12.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD	(0061)	Area	(ha)=	2.71	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.06				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.143 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 10.685
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.200

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

CALIB							
NASHYD	(0063)	Area	(ha)=	4.48	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.06				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.238 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 10.894
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.204

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

ADD HYD (0065)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0061):	2.71	0.143	1.33	10.68	
+ ID2= 2 (0063):	4.48	0.238	1.33	10.89	
ID = 3 (0065):	7.19	0.382	1.33	10.82	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0062) | Area (ha)= 2.00 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.06

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.106 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 10.844
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.203

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

ADD HYD (0064)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0062):	2.00	0.106	1.33	10.84
+ ID2= 2 (0065):	7.19	0.382	1.33	10.82
=====				
ID = 3 (0064):	9.19	0.488	1.33	10.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0066) | Area (ha)= 2.43 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.09

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.115 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 12.286
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.230

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

CALIB
NASHYD (0067) | Area (ha)= 1.23 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.11

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.054 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.488
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.233

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

ADD HYD (0068)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0066):	2.43	0.115	1.33	12.29
+ ID2= 2 (0067):	1.23	0.054	1.42	12.49
=====				
ID = 3 (0068):	3.67	0.165	1.33	12.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0070) | Area (ha)= 3.48 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

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

----- TRANSFORMED HYETOGRAPH -----			
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.91	1.083	33.34
0.167	2.91	1.167	33.34
0.250	3.45	1.250	105.21
0.333	3.45	1.333	105.21
0.417	4.24	1.417	43.73
0.500	4.24	1.500	43.73
0.583	5.50	1.583	22.99
0.667	5.50	1.667	22.99
0.750	7.78	1.750	15.02
0.833	7.78	1.833	15.02
0.917	12.98	1.917	10.97
1.000	12.98	2.000	10.97

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.140 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.633
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

CALIB					
NASHYD	(0071)	Area	(ha)= 1.74	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.077 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.495
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.234

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

ADD HYD (0069)					
1 + 2 = 3					
ID1= 1 (0068):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0070):	3.67	0.165	1.33	12.35	
	3.48	0.140	1.50	12.63	
ID = 3 (0069):	7.14	0.295	1.42	12.49	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)					
3 + 2 = 1					
ID1= 3 (0069):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0071):	7.14	0.295	1.42	12.49	
	1.74	0.077	1.42	12.50	
ID = 1 (0069):	8.88	0.372	1.42	12.49	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0073)	Area	(ha)= 3.30	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.16		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.132 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.636
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.236

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

CALIB					
NASHYD	(0074)	Area	(ha)= 1.80	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.475
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.233

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

ADD HYD (0072)					
1 + 2 = 3					
ID1= 1 (0069):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0073):	8.88	0.372	1.42	12.49	
	3.30	0.132	1.50	12.64	
ID = 3 (0072):	12.18	0.496	1.42	12.53	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)					
3 + 2 = 1					
ID1= 3 (0072):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0074):	12.18	0.496	1.42	12.53	
	1.80	0.080	1.42	12.48	
ID = 1 (0072):	13.98	0.576	1.42	12.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUU A A LLLLL
000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

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

CALIB					
NASHYD (0084)	Area (ha)=	2.24	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.15			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.182 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.410
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0002):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0005):	7.76	0.566	1.50	24.35
	3.75	0.257	1.58	24.51
ID = 3 (0004):	11.51	0.812	1.50	24.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
ID1= 3 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0084):	11.51	0.812	1.50	24.40
	2.24	0.182	1.50	24.41
ID = 1 (0004):	13.75	0.994	1.50	24.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0007)	Area (ha)=	5.53	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.26			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.350 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 24.525
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0006)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0007):	13.75	0.994	1.50	24.40
	5.53	0.350	1.67	24.53
ID = 3 (0006):	19.28	1.311	1.50	24.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0009)	Area (ha)=	9.72	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.16			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.787 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.417
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

CALIB					
NASHYD (0010)	Area (ha)=	1.91	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.08			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.199 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 23.041
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.301

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

CALIB				
NASHYD (0012)	Area (ha)=	6.10	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.16		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.490 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.428
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

ADD HYD (0011)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	1.91	0.199	1.33	23.04
+ ID2= 2 (0012):	6.10	0.490	1.50	24.43
ID = 3 (0011):	8.01	0.633	1.50	24.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0014)	Area (ha)=	7.32	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.14		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.603 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.374
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

ADD HYD (0013)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	8.01	0.633	1.50	24.10
+ ID2= 2 (0014):	7.32	0.603	1.50	24.37
ID = 3 (0013):	15.33	1.236	1.50	24.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0016)	Area (ha)=	6.31	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.15		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.515 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.396
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

ADD HYD (0015)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	15.33	1.236	1.50	24.23
+ ID2= 2 (0016):	6.31	0.515	1.50	24.40
ID = 3 (0015):	21.64	1.751	1.50	24.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	21.64	1.751	1.50	24.28
+ ID2= 2 (0006):	19.28	1.311	1.50	24.44
ID = 3 (0008):	40.92	3.063	1.50	24.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0008):	40.92	3.063	1.50	24.35
+ ID2= 2 (0009):	9.72	0.787	1.50	24.42
=====				
ID = 1 (0008):	50.64	3.850	1.50	24.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0017)	Area	(ha)= 33.00	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.22		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 2.284 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 24.511
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

CALIB				
NASHYD (0054)	Area	(ha)= 133.44	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	2.71		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 1.684 (i)
TIME TO PEAK (hrs)= 4.583
RUNOFF VOLUME (mm)= 24.542
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				
NASHYD (0057)	Area	(ha)= 242.32	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.36		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 5.245 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 24.542
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				
NASHYD (0058)	Area	(ha)= 351.72	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.98		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 5.714 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 24.542
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0059)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0054):	133.44	1.684	4.58	24.54
+ ID2= 2 (0057):	242.32	5.245	3.08	24.54
=====				
ID = 3 (0059):	375.76	6.470	3.25	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0059):	375.76	6.470	3.25	24.54	
+ ID2= 2 (0058):	351.72	5.714	3.83	24.54	
=====					
ID = 1 (0059):	727.48	11.999	3.50	24.54	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0017):		33.00	2.284	1.58	24.51
+ ID2= 2 (0059):		727.48	11.999	3.50	24.54
=====					
ID = 3 (0060):		760.48	12.234	3.50	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				Area (ha)= 11.67		Curve Number (CN)= 65.0	
NASHYD (0019)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.23			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 0.800 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 24.513
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

CALIB				Area (ha)= 5.65		Curve Number (CN)= 65.0	
NASHYD (0036)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.16			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.457 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.420
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

CALIB				Area (ha)= 10.22		Curve Number (CN)= 65.0	
NASHYD (0038)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.38			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.525 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 24.538
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				Area (ha)= 9.34		Curve Number (CN)= 65.0	
NASHYD (0039)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.21			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.658 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 24.504
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

ADD HYD (0037)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0036):	5.65	0.457	1.50	24.42
+ ID2= 2 (0038):	10.22	0.525	1.83	24.54
=====				
ID = 3 (0037):	15.87	0.853	1.58	24.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0037):	15.87	0.853	1.58	24.50
+ ID2= 2 (0039):	9.34	0.658	1.58	24.50
=====				
ID = 1 (0037):	25.21	1.512	1.58	24.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0041)				
ID= 1 DT= 5.0 min	Area	(ha)=	22.97	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.72		

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26
0.167	3.91	1.167	49.06	2.167	12.26
0.250	4.69	1.250	148.61	2.250	9.92
0.333	4.69	1.333	148.61	2.333	9.92
0.417	5.83	1.417	64.28	2.417	8.29
0.500	5.83	1.500	64.28	2.500	8.29
0.583	7.68	1.583	33.91	2.583	7.10
0.667	7.68	1.667	33.91	2.667	7.10
0.750	11.07	1.750	21.97	2.750	6.19
0.833	11.07	1.833	21.97	2.833	6.19
0.917	18.89	1.917	15.87	2.917	5.49
1.000	18.89	2.000	15.87	3.000	5.49

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.788 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 24.541
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				
NASHYD (0042)				
ID= 1 DT= 5.0 min	Area	(ha)=	9.47	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.34		

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26
0.167	3.91	1.167	49.06	2.167	12.26
0.250	4.69	1.250	148.61	2.250	9.92
0.333	4.69	1.333	148.61	2.333	9.92
0.417	5.83	1.417	64.28	2.417	8.29
0.500	5.83	1.500	64.28	2.500	8.29
0.583	7.68	1.583	33.91	2.583	7.10
0.667	7.68	1.667	33.91	2.667	7.10
0.750	11.07	1.750	21.97	2.750	6.19
0.833	11.07	1.833	21.97	2.833	6.19
0.917	18.89	1.917	15.87	2.917	5.49
1.000	18.89	2.000	15.87	3.000	5.49

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.525 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 24.536
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0040)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0037):	25.21	1.512	1.58	24.50
+ ID2= 2 (0041):	22.97	0.788	2.25	24.54
=====				
ID = 3 (0040):	48.18	1.912	1.67	24.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0040):	48.18	1.912	1.67	24.52
+ ID2= 2 (0042):	9.47	0.525	1.75	24.54
=====				
ID = 1 (0040):	57.65	2.428	1.67	24.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0044)				
ID= 1 DT= 5.0 min	Area	(ha)=	8.60	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.26		

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26
0.167	3.91	1.167	49.06	2.167	12.26
0.250	4.69	1.250	148.61	2.250	9.92
0.333	4.69	1.333	148.61	2.333	9.92
0.417	5.83	1.417	64.28	2.417	8.29
0.500	5.83	1.500	64.28	2.500	8.29
0.583	7.68	1.583	33.91	2.583	7.10
0.667	7.68	1.667	33.91	2.667	7.10
0.750	11.07	1.750	21.97	2.750	6.19
0.833	11.07	1.833	21.97	2.833	6.19
0.917	18.89	1.917	15.87	2.917	5.49
1.000	18.89	2.000	15.87	3.000	5.49

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.544 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 24.525
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				
NASHYD (0045)				
ID= 1 DT= 5.0 min	Area	(ha)=	39.90	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.96		

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 1.112 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 24.541
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0043)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0040):	57.65	2.428	1.67	24.52	
+ ID2= 2 (0044):	8.60	0.544	1.67	24.53	
=====					
ID = 3 (0043):	66.24	2.972	1.67	24.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)					
3 + 2 = 1					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0043):	66.24	2.972	1.67	24.52	
+ ID2= 2 (0045):	39.90	1.112	2.58	24.54	
=====					
ID = 1 (0043):	106.15	3.482	1.75	24.53	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0047)		Area (ha)=	9.43	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.33		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.531 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 24.535
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0046)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0043):	106.15	3.482	1.75	24.53	
+ ID2= 2 (0047):	9.43	0.531	1.75	24.53	
=====					
ID = 3 (0046):	115.58	4.013	1.75	24.53	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0049)		Area (ha)=	6.91	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.34		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.378 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 24.536
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0048)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0046):	115.58	4.013	1.75	24.53	
+ ID2= 2 (0049):	6.91	0.378	1.75	24.54	
=====					
ID = 3 (0048):	122.49	4.391	1.75	24.53	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0051)		Area (ha)=	6.04	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.35		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.326 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 24.537
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB				
NASHYD (0053)	Area (ha)=	6.30	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.20		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.449 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 24.498
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

ADD HYD (0050)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	122.49	4.391	1.75	24.53
+ ID2= 2 (0051):	6.04	0.326	1.75	24.54
ID = 3 (0050):	128.53	4.718	1.75	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0050):	128.53	4.718	1.75	24.53
+ ID2= 2 (0053):	6.30	0.449	1.58	24.50
ID = 1 (0050):	134.83	5.080	1.75	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	11.67	0.800	1.58	24.51
+ ID2= 2 (0050):	134.83	5.080	1.75	24.53
ID = 3 (0018):	146.50	5.800	1.67	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0018):	146.50	5.800	1.67	24.53
+ ID2= 2 (0060):	760.48	12.234	3.50	24.54
ID = 1 (0018):	906.97	14.235	3.17	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0021)	Area (ha)=	4.50	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.13		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.381 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 24.318
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.318

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

CALIB				
NASHYD (0024)	Area (ha)=	2.57	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.23		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.175 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 24.514
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

ADD HYD (0020)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0018):	906.97	14.235	3.17	24.54	
+ ID2= 2 (0021):	4.50	0.381	1.42	24.32	
=====					
ID = 3 (0020):	911.47	14.271	3.17	24.54	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0020):	911.47	14.271	3.17	24.54	
+ ID2= 2 (0024):	2.57	0.175	1.58	24.51	
=====					
ID = 1 (0020):	914.04	14.294	3.17	24.54	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0023)					
ID= 1 DT= 5.0 min	Area	(ha)=	4.40	Curve Number (CN)=	65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.21			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.313 (i)
 TIME TO PEAK (hrs)= 1.583
 RUNOFF VOLUME (mm)= 24.500
 TOTAL RAINFALL (mm)= 76.492
 RUNOFF COEFFICIENT = 0.320

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

CALIB					
NASHYD (0025)					
ID= 1 DT= 5.0 min	Area	(ha)=	10.27	Curve Number (CN)=	65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.38			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.525 (i)
 TIME TO PEAK (hrs)= 1.833
 RUNOFF VOLUME (mm)= 24.538
 TOTAL RAINFALL (mm)= 76.492
 RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0022)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0020):	914.04	14.294	3.17	24.54	
+ ID2= 2 (0023):	4.40	0.313	1.58	24.50	
=====					
ID = 3 (0022):	918.45	14.332	3.17	24.54	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0022):	918.45	14.332	3.17	24.54	
+ ID2= 2 (0025):	10.27	0.525	1.83	24.54	
=====					
ID = 1 (0022):	928.72	14.450	3.17	24.54	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0027)					
ID= 1 DT= 5.0 min	Area	(ha)=	13.51	Curve Number (CN)=	65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.27			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.844 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 24.527
 TOTAL RAINFALL (mm)= 76.492
 RUNOFF COEFFICIENT = 0.321

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

CALIB					
NASHYD (0028)					
ID= 1 DT= 5.0 min	Area	(ha)=	4.77	Curve Number (CN)=	65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.42			

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.231 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 24.539
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0026)				
1 + 2 = 3				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 1 (0022):	928.72	14.450	3.17	24.54
+ ID2= 2 (0027):	13.51	0.844	1.67	24.53
=====				
ID = 3 (0026):	942.23	14.577	3.17	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)				
3 + 2 = 1				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 3 (0026):	942.23	14.577	3.17	24.54
+ ID2= 2 (0028):	4.77	0.231	1.83	24.54
=====				
ID = 1 (0026):	947.00	14.640	3.08	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0030)				
ID= 1 DT= 5.0 min				

		Area	(ha)=	5.98
		Ia	(mm)=	5.00
		U.H. Tp(hrs)=		0.19
		Curve Number (CN)=	65.0	
		# of Linear Res.(N)=	3.00	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.446 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.483
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

CALIB				
NASHYD (0031)				
ID= 1 DT= 5.0 min				

		Area	(ha)=	18.74
		Ia	(mm)=	5.00
		U.H. Tp(hrs)=		0.19
		Curve Number (CN)=	65.0	
		# of Linear Res.(N)=	3.00	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 1.401 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.482
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.320

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

ADD HYD (0029)				
1 + 2 = 3				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 1 (0026):	947.00	14.640	3.08	24.54
+ ID2= 2 (0030):	5.98	0.446	1.50	24.48
=====				
ID = 3 (0029):	952.98	14.694	3.08	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)				
3 + 2 = 1				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 3 (0029):	952.98	14.694	3.08	24.54
+ ID2= 2 (0031):	18.74	1.401	1.50	24.48
=====				
ID = 1 (0029):	971.72	14.861	3.08	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0034)				
ID= 1 DT= 5.0 min				

		Area	(ha)=	10.09
		Ia	(mm)=	5.00
		U.H. Tp(hrs)=		0.29
		Curve Number (CN)=	65.0	
		# of Linear Res.(N)=	3.00	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.613 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 24.530
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB			
NASHYD (0035)	Area (ha)= 4.98	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.13		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.424 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 24.305
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.318

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

ADD HYD (0033)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0029):	971.72	14.861	3.08	24.54
+ ID2= 2 (0034):	10.09	0.613	1.67	24.53
ID = 3 (0033):	981.81	14.965	3.08	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0033):	981.81	14.965	3.08	24.54
+ ID2= 2 (0035):	4.98	0.424	1.42	24.31
ID = 1 (0033):	986.79	15.006	3.08	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0061)	Area (ha)= 2.71	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.06		

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.286 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 20.653
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.270

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

CALIB			
NASHYD (0063)	Area (ha)= 4.48	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.06		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.475 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 21.058
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.275

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

ADD HYD (0065)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0061):	2.71	0.286	1.33	20.65
+ ID2= 2 (0063):	4.48	0.475	1.33	21.06
ID = 3 (0065):	7.19	0.761	1.33	20.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0062)	Area (ha)= 2.00	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.06		

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.211 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 20.962
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.274

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

ADD HYD (0064)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0062):	2.00	0.211	1.33	20.96	
+ ID2= 2 (0065):	7.19	0.761	1.33	20.91	
=====					
ID = 3 (0064):	9.19	0.972	1.33	20.92	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0066)		Area (ha)=	2.43	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.09		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.234 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 23.747
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.310

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

CALIB					
NASHYD (0067)		Area	(ha)=	1.23	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=	0.11		

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.109 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 24.139
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.316

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

ADD HYD (0068)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0066):	2.43	0.234	1.33	23.75	
+ ID2= 2 (0067):	1.23	0.109	1.42	24.14	
=====					
ID = 3 (0068):	3.67	0.337	1.33	23.88	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0070)		Area (ha)=	3.48	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.16		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.281 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.419
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

CALIB					
NASHYD (0071)		Area (ha)=	1.74	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

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

0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.154 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 24.153
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.316

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

ADD HYD (0069)				
1 + 2 = 3				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 1 (0068):		3.67	0.337	1.33
+ ID2= 2 (0070):		3.48	0.281	1.50
				23.88
				24.42
ID = 3 (0069):		7.14	0.596	1.42
				24.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)				
3 + 2 = 1				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 3 (0069):		7.14	0.596	1.42
+ ID2= 2 (0071):		1.74	0.154	1.42
				24.14
				24.15
ID = 1 (0069):		8.88	0.750	1.42
				24.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0073)				
ID= 1 DT= 5.0 min				
		Area	(ha)=	3.30
		Ia	(mm)=	5.00
		U.H. Tp(hrs)=		0.16
		Curve Number (CN)=		65.0
		# of Linear Res.(N)=		3.00

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.266 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.424
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

CALIB				
NASHYD (0074)				
ID= 1 DT= 5.0 min				
		Area	(ha)=	1.80
		Ia	(mm)=	5.00
		U.H. Tp(hrs)=		0.11
		Curve Number (CN)=		65.0
		# of Linear Res.(N)=		3.00

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.160 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 24.115
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.315

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

ADD HYD (0072)				
1 + 2 = 3				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 1 (0069):		8.88	0.750	1.42
+ ID2= 2 (0073):		3.30	0.266	1.50
				24.14
				24.42
ID = 3 (0072):		12.18	1.003	1.42
				24.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)				
3 + 2 = 1				
		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
ID1= 3 (0072):		12.18	1.003	1.42
+ ID2= 2 (0074):		1.80	0.160	1.42
				24.22
				24.11
ID = 1 (0072):		13.98	1.164	1.42
				24.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V	V	I	SSSSS	U	U	A	L	(v 6.2.2008)			
V	V	I	SS	U	U	A A	L				
V	V	I	SS	U	U	AAAAA	L				
V	V	I	SS	U	U	A A	L				
VV	I	SSSSS	UUUUU	A	A	LLLL					
000	TTTTT	TTTTT	H	H	Y	Y	M	M	000	TM	
O	O	T	T	H	H	Y	MM	MM	O	O	
O	O	T	T	H	H	Y	M	M	O	O	
000	T	T	H	H	Y	M	M	M	000		

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\52cd
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\52cd

DATE: 05/31/2022 TIME: 04:04:09

USER:

COMMENTS: _____

** SIMULATION : Cavan 2 Year **

CHICAGO STORM
Ptotal= 34.03 mm

IDF curve parameters: A= 662.000
B= 7.500
C= 0.790
used in: INTENSITY = A / (t + B)^C
Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.29	1.00	18.79	2.00	5.56	3.00	2.73
0.17	2.63	1.17	69.00	2.17	4.70	3.17	2.53
0.33	3.11	1.33	24.52	2.33	4.09	3.33	2.36
0.50	3.85	1.50	13.09	2.50	3.62	3.50	2.21
0.67	5.12	1.67	8.95	2.67	3.26	3.67	2.09
0.83	7.88	1.83	6.84	2.83	2.97	3.83	1.97

CALIB
NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.64 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.11

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.043 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 4.979
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.146

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

CALIB
NASHYD (0083)
ID= 1 DT= 5.0 min

Area (ha)= 5.12 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

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

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

0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.064 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.075
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

(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 (0003):	2.64	0.043	1.42	4.98
+ ID2= 2 (0083):	5.12	0.064	1.58	5.08
ID = 3 (0002):	7.76	0.101	1.50	5.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 3.75 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.23

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.076
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB
NASHYD (0084)
ID= 1 DT= 5.0 min

Area (ha)= 2.24 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.15

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

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

0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.033 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.055
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

(i) 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 (0002):	7.76	0.101	1.50	5.04			
+ ID2= 2 (0005):	3.75	0.046	1.58	5.08			
=====							
ID = 3 (0004):	11.51	0.144	1.50	5.05			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)							
3 + 2 = 1							
		AREA	QPEAK	TPEAK		R.V.	
		(ha)	(cms)	(hrs)		(mm)	
ID1= 3 (0004):	11.51	0.144	1.50	5.05			
+ ID2= 2 (0084):	2.24	0.033	1.50	5.05			
=====							
ID = 1 (0004):	13.75	0.177	1.50	5.05			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0007)							
ID= 1 DT= 5.0 min							
	Area	(ha)=	5.53	Curve Number (CN)=	65.0		
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.26					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.063 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 5.079
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

(i) 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 (0004):	13.75	0.177	1.50	5.05			
+ ID2= 2 (0007):	5.53	0.063	1.67	5.08			
=====							
ID = 3 (0006):	19.28	0.233	1.58	5.06			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0009)							
ID= 1 DT= 5.0 min							
	Area	(ha)=	9.72	Curve Number (CN)=	65.0		
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.16					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.142 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.056
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB							
NASHYD (0010)							
ID= 1 DT= 5.0 min							
	Area	(ha)=	1.91	Curve Number (CN)=	65.0		
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.08					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.037 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 4.772
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.140

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

CALIB					
NASHYD (0012)	Area (ha)=	6.10	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.16			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.059
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0011)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0010):	1.91	0.037	1.33	4.77	
+ ID2= 2 (0012):	6.10	0.088	1.50	5.06	
ID = 3 (0011):	8.01	0.115	1.50	4.99	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0014)	Area (ha)=	7.32	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.14			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.109 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.048
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.148

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

ADD HYD (0013)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0011):	8.01	0.115	1.50	4.99	
+ ID2= 2 (0014):	7.32	0.109	1.50	5.05	
ID = 3 (0013):	15.33	0.224	1.50	5.02	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0016)	Area (ha)=	6.31	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.15			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.093 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.052
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.148

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

ADD HYD (0015)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0013):	15.33	0.224	1.50	5.02	
+ ID2= 2 (0016):	6.31	0.093	1.50	5.05	
ID = 3 (0015):	21.64	0.317	1.50	5.03	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0015):	21.64	0.317	1.50	5.03	
+ ID2= 2 (0006):	19.28	0.233	1.58	5.06	
ID = 3 (0008):	40.92	0.549	1.50	5.04	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0008):	40.92	0.549	1.50	5.04	
+ ID2= 2 (0009):	9.72	0.142	1.50	5.06	
ID = 1 (0008):	50.64	0.691	1.50	5.05	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0017)
ID= 1 DT= 5.0 min

Area (ha)= 33.00
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.22

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 0.408 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.076
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB
NASHYD (0054)
ID= 1 DT= 5.0 min

Area (ha)= 133.44
Ia (mm)= 5.00
U.H. Tp(hrs)= 2.71

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 0.343 (i)
TIME TO PEAK (hrs)= 4.833
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB
NASHYD (0057)
ID= 1 DT= 5.0 min

Area (ha)= 242.32
Ia (mm)= 5.00
U.H. Tp(hrs)= 1.36

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

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

0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 1.012 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB
NASHYD (0058)
ID= 1 DT= 5.0 min

Area (ha)= 351.72
Ia (mm)= 5.00
U.H. Tp(hrs)= 1.98

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 1.145 (i)
TIME TO PEAK (hrs)= 4.083
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0059)
1 + 2 = 3

ID1= 1 (0054):	133.44	0.343	4.83	5.08
+ ID2= 2 (0057):	242.32	1.012	3.25	5.08
=====				
ID = 3 (0059):	375.76	1.265	3.50	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)
3 + 2 = 1

ID1= 3 (0059):	375.76	1.265	3.50	5.08
+ ID2= 2 (0058):	351.72	1.145	4.08	5.08
=====				
ID = 1 (0059):	727.48	2.377	3.83	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0017):	33.00	0.408	1.58	5.08
+ ID2= 2 (0059):	727.48	2.377	3.83	5.08
=====				
ID = 3 (0060):	760.48	2.443	3.75	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0019)	Area	(ha)= 11.67	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.23		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 0.143 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.076
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0036)	Area	(ha)= 5.65	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.16		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.082 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.057
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0038)	Area	(ha)= 10.22	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.38		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.094 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 5.081
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0039)	Area	(ha)= 9.34	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.21		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.118 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.075
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0037)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0036):	5.65	0.082	1.50	5.06
+ ID2= 2 (0038):	10.22	0.094	1.83	5.08
=====				
ID = 3 (0037):	15.87	0.151	1.67	5.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0037):	15.87	0.151	1.67	5.07
+ ID2= 2 (0039):	9.34	0.118	1.58	5.07
ID = 1 (0037):	25.21	0.268	1.58	5.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0041)	Area	(ha)= 22.97	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.72		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.145 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0042)	Area	(ha)= 9.47	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.34		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.094 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 5.081
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0040)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0037):	25.21	0.268	1.58	5.07
+ ID2= 2 (0041):	22.97	0.145	2.33	5.08
ID = 3 (0040):	48.18	0.339	1.75	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0040):	48.18	0.339	1.75	5.08
+ ID2= 2 (0042):	9.47	0.094	1.75	5.08
ID = 1 (0040):	57.65	0.433	1.75	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0044)	Area	(ha)= 8.60	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.26		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.097 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 5.079
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0045)	Area	(ha)= 39.90	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.96		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 0.208 (i)
TIME TO PEAK (hrs)= 2.667
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0043)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0040):	57.65	0.433	1.75	5.08	
+ ID2= 2 (0044):	8.60	0.097	1.67	5.08	
=====					
ID = 3 (0043):	66.24	0.526	1.67	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0043):	66.24	0.526	1.67	5.08	
+ ID2= 2 (0045):	39.90	0.208	2.67	5.08	
=====					
ID = 1 (0043):	106.15	0.624	1.83	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0047)				Area (ha)= 9.43		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
				U.H. Tp(hrs)= 0.33			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.095 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 5.081
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0046)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0043):	106.15	0.624	1.83	5.08	
+ ID2= 2 (0047):	9.43	0.095	1.75	5.08	
=====					
ID = 3 (0046):	115.58	0.717	1.83	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0049)				Area (ha)= 6.91		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
				U.H. Tp(hrs)= 0.34			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.067 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 5.081
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0048)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0046):	115.58	0.717	1.83	5.08	
+ ID2= 2 (0049):	6.91	0.067	1.75	5.08	
=====					
ID = 3 (0048):	122.49	0.783	1.83	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0051)				Area (ha)= 6.04		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
				U.H. Tp(hrs)= 0.35			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.058 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 5.081
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB	Area (ha)=	6.30	Curve Number (CN)=	65.0
NASHYD (0053)	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.20		

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

		--- TRANSFORMED		HYETOGRAPH		---	
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	4.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	4.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW	(cms)=	0.081	(i)
TIME TO PEAK	(hrs)=	1.583	
RUNOFF VOLUME	(mm)=	5.073	
TOTAL RAINFALL	(mm)=	34.028	
RUNOFF COEFFICIENT	=	0.149	

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

ADD 1 + 2 = 3	HYD (0050)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):		122.49	0.783	1.83	5.08
+ ID2= 2 (0051):		6.04	0.058	1.75	5.08
ID = 3 (0050)		128.53	0.841	1.83	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):	128.53	0.841	1.83	5.08
+ ID2= 2 (0053):	6.30	0.081	1.58	5.07
ID = 1 (0050):	134.83	0.904	1.75	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD 1 + 2 = 3	HYD (0018)			
ID1= 1 (0019):	11.67	0.143	1.58	5.08
ID2= 2 (0050):	134.83	0.904	1.75	5.08
ID = 3 (0018):	146.50	1.031	1.75	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD 3 + 2 = 1 (0018)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0018):	146.50	1.031	1.75	5.08
+ ID2= 2 (0060):	760.48	2.443	3.75	5.08
=====				
ID = 1 (0018):	906.97	2.865	3.50	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	4.50	Curve Number (CN)=	65.0
NASHYD (0021)	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.13		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.09
0.750	4.12	1.750	3.60	2.750	3.76	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW	(cms)=	0.068	(i)
TIME TO PEAK	(hrs)=	1.417	
RUNOFF VOLUME	(mm)=	5.036	
TOTAL RAINFALL	(mm)=	34.028	
RUNOFF COEFFICIENT	=	0.148	

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

CALIB	Area (ha)=	2.57	Curve Number (CN)=	65.0
NASHYD (0024)	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.23		

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56
0.167	2.29	1.167	18.79	2.167	5.56
0.250	2.63	1.250	69.00	2.250	4.70
0.333	2.63	1.333	69.00	2.333	4.70
0.417	3.11	1.417	24.52	2.417	4.09
0.500	3.11	1.500	24.52	2.500	4.09
0.583	3.85	1.583	13.09	2.583	3.62
0.667	4.68	1.667	13.09	2.667	3.62
0.750	5.12	1.750	8.95	2.750	3.26
0.833	5.12	1.833	8.95	2.833	3.26
0.917	7.88	1.917	6.84	2.917	2.97
1.000	7.88	2.000	6.84	3.000	2.97

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW	(cms)=	0.031	(i)
TIME TO PEAK	(hrs)=	1.583	
RUNOFF VOLUME	(mm)=	5.076	
TOTAL RAINFALL	(mm)=	34.028	
RUNOFF COEFFICIENT	=	0.149	

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

ADD HYD (0020) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0018):	906.97	2.865	3.50	5.08
+ ID2= 2 (0021):	4.50	0.068	1.42	5.04
ID = 3 (0020):	911.47	2.874	3.50	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0020):	911.47	2.874	3.50	5.08
+ ID2= 2 (0024):	2.57	0.031	1.58	5.08
ID = 1 (0020):	914.04	2.880	3.50	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0023)	Area	(ha)=	4.40	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.21		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.056 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 5.074
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0025)	Area	(ha)=	10.27	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.094 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0022)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0020):	914.04	2.880	3.50	5.08
+ ID2= 2 (0023):	4.40	0.056	1.58	5.07
ID = 3 (0022):	918.45	2.889	3.50	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0022):	918.45	2.889	3.50	5.08
+ ID2= 2 (0025):	10.27	0.094	1.83	5.08
ID = 1 (0022):	928.72	2.915	3.42	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0027)	Area	(ha)=	13.51	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.27		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.151 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 5.079
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0028)	Area	(ha)=	4.77	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.42		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.041 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0026)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0022):	928.72	2.915	3.42	5.08	
+ ID2= 2 (0027):	13.51	0.151	1.67	5.08	
=====					
ID = 3 (0026):	942.23	2.947	3.42	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0026):	942.23	2.947	3.42	5.08	
+ ID2= 2 (0028):	4.77	0.041	1.92	5.08	
=====					
ID = 1 (0026):	947.00	2.960	3.42	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0030)			
ID= 1 DT= 5.0 min			
Area (ha)=	5.98	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.19		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.079 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.070
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB				
NASHYD (0031)	Area (ha)=	18.74	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.19		

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

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

0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 0.249 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.070
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0029)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0026):	947.00	2.960	3.42	5.08	
+ ID2= 2 (0030):	5.98	0.079	1.50	5.07	
=====					
ID = 3 (0029):	952.98	2.973	3.42	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0029):	952.98	2.973	3.42	5.08	
+ ID2= 2 (0031):	18.74	0.249	1.50	5.07	
=====					
ID = 1 (0029):	971.72	3.015	3.42	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0034)	Area	(ha)=	10.09	Curve Number (CN)= 65.0
ID= 1	DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp	(hrs)=	0.29	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.109 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 5.080
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB					
NASHYD (0035)	Area (ha)=	4.98	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.13			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.076 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 5.033
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.148

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

ADD HYD (0033)				
1 + 2 = 3				
ID1= 1 (0029):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0034):	971.72	3.015	3.42	5.08
	10.09	0.109	1.67	5.08
ID = 3 (0033):	981.81	3.039	3.33	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)				
3 + 2 = 1				
ID1= 3 (0033):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0035):	981.81	3.039	3.33	5.08
	4.98	0.076	1.42	5.03
ID = 1 (0033):	986.79	3.050	3.33	5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0061)	Area (ha)=	2.71	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.055 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 4.277
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.126

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

CALIB					
NASHYD (0063)	Area (ha)=	4.48	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.091 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 4.361
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.128

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

ADD HYD (0065)				
1 + 2 = 3				
ID1= 1 (0061):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0063):	2.71	0.055	1.33	4.28
	4.48	0.091	1.33	4.36
ID = 3 (0065):	7.19	0.146	1.33	4.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0062)	Area (ha)=	2.00	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.041 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 4.341
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.128

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

ADD HYD (0064)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3					
ID1= 1 (0062):		2.00	0.041	1.33	4.34
+ ID2= 2 (0065):		7.19	0.146	1.33	4.33
=====					
ID = 3 (0064):		9.19	0.187	1.33	4.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0066)			
ID= 1 DT= 5.0 min	Area (ha)= 2.43	Curve Number (CN)= 65.0	
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.09		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.042 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 4.918
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.145

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

CALIB			
NASHYD (0067)			
ID= 1 DT= 5.0 min	Area (ha)= 1.23	Curve Number (CN)= 65.0	
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.11		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.020 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 4.999
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.147

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

ADD HYD (0068)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0066):	2.43	0.042	1.33	4.92	
+ ID2= 2 (0067):	1.23	0.020	1.42	5.00	
=====					
ID = 3 (0068):	3.67	0.060	1.33	4.94	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0070)			
ID= 1 DT= 5.0 min	Area (ha)= 3.48	Curve Number (CN)= 65.0	
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.16		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.051 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.057
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB			
NASHYD (0071)			
ID= 1 DT= 5.0 min	Area (ha)= 1.74	Curve Number (CN)= 65.0	
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.11		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.028 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 5.002
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.147

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

ADD HYD (0069)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0068):	3.67	0.060	1.33	4.94	
+ ID2= 2 (0070):	3.48	0.051	1.50	5.06	
=====					
ID = 3 (0069):	7.14	0.108	1.42	5.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0069):	7.14	0.108	1.42	5.00	
+ ID2= 2 (0071):	1.74	0.028	1.42	5.00	
=====					
ID = 1 (0069):	8.88	0.136	1.42	5.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	3.30	Curve Number (CN)=	65.0
NASHYD (0073)	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.16		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.048 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.058
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB			
NASHYD (0074)	Area (ha)=	1.80	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.11	

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

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

0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.029 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 4.994
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.147

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

ADD HYD (0072)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0069):	8.88	0.136	1.42	5.00	
+ ID2= 2 (0073):	3.30	0.048	1.50	5.06	
=====					
ID = 3 (0072):	12.18	0.180	1.42	5.02	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0072):	12.18	0.180	1.42	5.02	
+ ID2= 2 (0074):	1.80	0.029	1.42	4.99	
=====					
ID = 1 (0072):	13.98	0.210	1.42	5.01	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\3a12\
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\3a12\

DATE: 05/31/2022

TIME: 04:04:09

USER:

COMMENTS: _____

** SIMULATION : Cavan 25 Year **

CHICAGO STORM
Ptotal= 61.50 mm

IDF curve parameters: A=2010.000
B= 14.000
C= 0.880
used in: INTENSITY = A / (t + B)^{1/C}

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.09	1.00	39.20	2.00	9.66	3.00	3.89
0.17	3.70	1.17	122.63	2.17	7.82	3.17	3.53
0.33	4.60	1.33	51.58	2.33	6.53	3.33	3.22
0.50	6.06	1.50	26.88	2.50	5.60	3.50	2.97
0.67	8.73	1.67	17.34	2.67	4.89	3.67	2.75
0.83	14.90	1.83	12.51	2.83	4.33	3.83	2.56

CALIB
NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.64
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.11
Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.159 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.180
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.263

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

CALIB
NASHYD (0083)
ID= 1 DT= 5.0 min

Area (ha)= 5.12
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.22
Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.241 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.492
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

(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 (0003):	2.64	0.159	1.42	16.18
+ ID2= 2 (0083):	5.12	0.241	1.58	16.49
ID = 3 (0002):	7.76	0.380	1.50	16.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 3.75
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.23
Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.173 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.496
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB
NASHYD (0084)
ID= 1 DT= 5.0 min

Area (ha)= 2.24
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.15
Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.123 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.428
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

ADD HYD (0004)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	7.76	0.380	1.50	16.39
+ ID2= 2 (0005):	3.75	0.173	1.58	16.50
=====				
ID = 3 (0004):	11.51	0.544	1.50	16.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0004):	11.51	0.544	1.50	16.42	
+ ID2= 2 (0084):	2.24	0.123	1.50	16.43	
=====					
ID = 1 (0004):	13.75	0.666	1.50	16.42	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				Area (ha)= 5.53		Curve Number (CN)= 65.0	
NASHYD (0007)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.26			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.235 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 16.505
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

(i) 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 (0004):	13.75	0.666	1.50	16.42	
+ ID2= 2 (0007):	5.53	0.235	1.67	16.50	
=====					
ID = 3 (0006):	19.28	0.876	1.50	16.45	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				Area (ha)= 9.72		Curve Number (CN)= 65.0	
NASHYD (0009)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.16			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.530 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.432
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

CALIB				Area (ha)= 1.91		Curve Number (CN)= 65.0	
NASHYD (0010)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.08			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.134 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 15.506
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.252

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

CALIB				Area (ha)= 6.10		Curve Number (CN)= 65.0	
NASHYD (0012)				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min				U.H. Tp(hrs)= 0.16			

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.330 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.440
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

ADD HYD (0011)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	1.91	0.134	1.33	15.51
+ ID2= 2 (0012):	6.10	0.330	1.50	16.44
ID = 3 (0011):	8.01	0.427	1.50	16.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0014)	Area (ha)=	7.32	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.14		

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.407 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.403
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

ADD HYD (0013)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	8.01	0.427	1.50	16.22
+ ID2= 2 (0014):	7.32	0.407	1.50	16.40
ID = 3 (0013):	15.33	0.834	1.50	16.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0016)	Area (ha)=	6.31	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.15		

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.347 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.418
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

ADD HYD (0015)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	15.33	0.834	1.50	16.31
+ ID2= 2 (0016):	6.31	0.347	1.50	16.42
ID = 3 (0015):	21.64	1.181	1.50	16.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	21.64	1.181	1.50	16.34
+ ID2= 2 (0006):	19.28	0.876	1.50	16.45
ID = 3 (0008):	40.92	2.057	1.50	16.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0008):	40.92	2.057	1.50	16.39
+ ID2= 2 (0009):	9.72	0.530	1.50	16.43
ID = 1 (0008):	50.64	2.587	1.50	16.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0017)	Area (ha)=	33.00	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.22		

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 1.533 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.495
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB							
NASHYD (0054)	Area (ha)= 133.44	Curve Number (CN)= 65.0					
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 2.71						

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 1.133 (i)
TIME TO PEAK (hrs)= 4.583
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

CALIB							
NASHYD (0057)	Area (ha)= 242.32	Curve Number (CN)= 65.0					
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 1.36						

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 3.520 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

CALIB							
NASHYD (0058)	Area (ha)= 351.72	Curve Number (CN)= 65.0					
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 1.98						

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 3.840 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0059)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0054):	133.44	1.133	4.58	16.52	
+ ID2= 2 (0057):	242.32	3.520	3.08	16.52	
ID = 3 (0059):	375.76	4.343	3.25	16.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0059):	375.76	4.343	3.25	16.52	
+ ID2= 2 (0058):	351.72	3.840	3.83	16.52	
ID = 1 (0059):	727.48	8.059	3.50	16.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0017):	33.00	1.533	1.58	16.50	
+ ID2= 2 (0059):	727.48	8.059	3.50	16.52	
ID = 3 (0060):	760.48	8.222	3.50	16.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

Unit Hvd Opeak (cms)= 1.964

PEAK FLOW	(cms)=	0.536	(i)
TIME TO PEAK	(hrs)=	1.583	
RUNOFF VOLUME	(mm)=	16.497	
TOTAL RAINFALL	(mm)=	61.498	
RUNOFF COEFFICIENT	=	0.268	

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

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

Unit Hyd Opeak (cms)= 1.384

PEAK FLOW	(cms)=	0.307	(i)
TIME TO PEAK	(hrs)=	1.500	
RUNOFF VOLUME	(mm)=	16.434	
TOTAL RAINFALL	(mm)=	61.498	
RUNOFF COEFFICIENT	=	0.267	

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.17	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW	(cms)=	0.352	(i)
TIME TO PEAK	(hrs)=	1.833	
RUNOFF VOLUME	(mm)=	16.514	
TOTAL RAINFALL	(mm)=	61.498	
RUNOFF COEFFICIENT	=	0.269	

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

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

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW	(cms)=	0.442	(i)
TIME TO PEAK	(hrs)=	1.583	
RUNOFF VOLUME	(mm)=	16.491	
TOTAL RAINFALL	(mm)=	61.498	
RUNOFF COEFFICIENT	=	0.268	

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

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0041)	Area	(ha)= 22.97	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.72		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.528 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

CALIB					
NASHYD	(0042)	Area	(ha)= 9.47	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.34		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.352 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 16.512
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

ADD HYD	(0040)				
1 + 2 = 3		AREA		QPEAK	
		(ha)		(cms)	
ID1= 1 (0037):		25.21	1.013	1.58	16.49
+ ID2= 2 (0041):		22.97	0.528	2.25	16.52
ID = 3 (0040):		48.18	1.278	1.67	16.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0040)				
3 + 2 = 1		AREA		QPEAK	
		(ha)		(cms)	
ID1= 3 (0040):		48.18	1.278	1.67	16.50
+ ID2= 2 (0042):		9.47	0.352	1.75	16.51
ID = 1 (0040):		57.65	1.623	1.67	16.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0044)	Area	(ha)= 8.60	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.26		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.365 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 16.505
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB					
NASHYD	(0045)	Area	(ha)= 39.90	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.96		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 0.746 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0043)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0040):	57.65	1.623	1.67	16.50
+ ID2= 2 (0044):	8.60	0.365	1.67	16.51
ID = 3 (0043):	66.24	1.988	1.67	16.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0043):	66.24	1.988	1.67	16.50
+ ID2= 2 (0045):	39.90	0.746	2.58	16.52
ID = 1 (0043):	106.15	2.331	1.83	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0047)	Area (ha)=	9.43	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.33		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.356 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 16.511
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

ADD HYD (0046)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0043):	106.15	2.331	1.83	16.51
+ ID2= 2 (0047):	9.43	0.356	1.75	16.51
ID = 3 (0046):	115.58	2.683	1.75	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0049)	Area (ha)=	6.91	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.34		

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.253 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 16.512
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0048)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0046):	115.58	2.683	1.75	16.51
+ ID2= 2 (0049):	6.91	0.253	1.75	16.51
ID = 3 (0048):	122.49	2.937	1.75	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0051)	Area (ha)=	6.04	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.35		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.218 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 16.513
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

CALIB				
NASHYD (0053)	Area (ha)=	6.30	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.20		

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.302 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.487
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

ADD HYD (0050)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0048):	122.49	2.937	1.75	16.51
+ ID2= 2 (0051):	6.04	0.218	1.75	16.51
=====				
ID = 3 (0050):	128.53	3.155	1.75	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):	128.53	3.155	1.75	16.51
+ ID2= 2 (0053):	6.30	0.302	1.58	16.49
=====				
ID = 1 (0050):	134.83	3.401	1.75	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):	11.67	0.536	1.58	16.50
+ ID2= 2 (0050):	134.83	3.401	1.75	16.51
=====				
ID = 3 (0018):	146.50	3.876	1.67	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0018):	146.50	3.876	1.67	16.51
+ ID2= 2 (0060):	760.48	8.222	3.50	16.52
=====				
ID = 1 (0018):	906.97	9.568	3.17	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0021)							
ID= 1 DT= 5.0 min							
	Area	(ha)=	4.50	Curve Number	(CN)=	65.0	
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.13					

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.255 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.366
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.266

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

CALIB NASHYD (0024)							
ID= 1 DT= 5.0 min							
	Area	(ha)=	2.57	Curve Number	(CN)=	65.0	
	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.23					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.118 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.497
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

ADD HYD (0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0018):	906.97	9.568	3.17	16.51
+ ID2= 2 (0021):	4.50	0.255	1.42	16.37
=====				
ID = 3 (0020):	911.47	9.592	3.17	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0020):	911.47	9.592	3.17	16.51	
+ ID2= 2 (0024):	2.57	0.118	1.58	16.50	
=====					
ID = 1 (0020):	914.04	9.608	3.17	16.51	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0023)	Area	(ha)= 4.40	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.21		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.211 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 16.488
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB					
NASHYD	(0025)	Area	(ha)= 10.27	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.38		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.352 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 16.514
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

ADD HYD	(0022)				
1 + 2 = 3		AREA		QPEAK	
		(ha)		(cms)	
ID1= 1 (0020):		914.04		9.608	3.17
+ ID2= 2 (0023):		4.40		0.211	1.58
ID = 3 (0022):		918.45		9.634	3.17
					16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0022)				
3 + 2 = 1		AREA		QPEAK	
		(ha)		(cms)	
ID1= 3 (0022):		918.45		9.634	3.17
+ ID2= 2 (0025):		10.27		0.352	1.83
ID = 1 (0022):		928.72		9.715	3.17
					16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0027)	Area	(ha)= 13.51	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.27		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.566 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 16.506
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB					
NASHYD	(0028)	Area	(ha)= 4.77	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.42		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 16.514
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0026)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0022):		928.72	9.715	3.17	16.51
+ ID2= 2 (0027):		13.51	0.566	1.67	16.51
=====					
ID = 3 (0026):		942.23	9.803	3.17	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0026):	942.23	9.803	3.17	16.51	
+ ID2= 2 (0028):	4.77	0.155	1.83	16.51	
=====					
ID = 1 (0026):	947.00	9.844	3.17	16.51	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				NASHYD (0030)	
ID= 1 DT= 5.0 min					
Area	(ha)=	5.98	Curve Number	(CN)= 65.0	
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.19				

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.298 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.477
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB				NASHYD (0031)	
ID= 1 DT= 5.0 min					
Area	(ha)=	18.74	Curve Number	(CN)= 65.0	
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.19				

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 0.938 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.476
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

ADD HYD (0029)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0026):	947.00	9.844	3.17	16.51	
+ ID2= 2 (0030):	5.98	0.298	1.50	16.48	
=====					
ID = 3 (0029):	952.98	9.879	3.17	16.51	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0029):	952.98	9.879	3.17	16.51	
+ ID2= 2 (0031):	18.74	0.938	1.50	16.48	
=====					
ID = 1 (0029):	971.72	9.994	3.08	16.51	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				NASHYD (0034)	
ID= 1 DT= 5.0 min					
Area	(ha)=	10.09	Curve Number	(CN)= 65.0	
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.29				

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.410 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 16.508
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

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

CALIB				NASHYD (0035)	
ID= 1 DT= 5.0 min					
Area	(ha)=	4.98	Curve Number	(CN)= 65.0	
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.13				

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.284 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.357
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.266

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

ADD HYD (0033)				
1 + 2 = 3				
ID1= 1 (0029):	971.72	9.994	3.08	16.51
+ ID2= 2 (0034):	10.09	0.410	1.67	16.51
=====				
ID = 3 (0033):	981.81	10.065	3.08	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)				
3 + 2 = 1				
ID1= 3 (0033):	981.81	10.065	3.08	16.51
+ ID2= 2 (0035):	4.98	0.284	1.42	16.36
=====				
ID = 1 (0033):	986.79	10.093	3.08	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0061)				
ID= 1 DT= 5.0 min				

Area (ha)=	2.71	Curve Number (CN)=	65.0	
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.193 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 13.899
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.226

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

CALIB				
NASHYD (0063)				
ID= 1 DT= 5.0 min				

Area (ha)=	4.48	Curve Number (CN)=	65.0	
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.322 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 14.172
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.230

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

ADD HYD (0065)				
1 + 2 = 3				
ID1= 1 (0061):	2.71	0.193	1.33	13.90
+ ID2= 2 (0063):	4.48	0.322	1.33	14.17
=====				
ID = 3 (0065):	7.19	0.515	1.33	14.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0062)				
ID= 1 DT= 5.0 min				

Area (ha)=	2.00	Curve Number (CN)=	65.0	
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.06			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.143 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 14.107
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.229

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

ADD HYD (0064)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0062):	2.00	0.143	1.33	14.11
+ ID2= 2 (0065):	7.19	0.515	1.33	14.07
=====				
ID = 3 (0064):	9.19	0.658	1.33	14.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0066)			
ID= 1 DT= 5.0 min			
	Area (ha)=	2.43	Curve Number (CN)= 65.0
	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.09	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.156 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 15.982
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.260

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

CALIB			
NASHYD (0067)			
ID= 1 DT= 5.0 min			
	Area (ha)=	1.23	Curve Number (CN)= 65.0
	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.11	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.073 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.245
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.264

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

ADD HYD (0068)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0066):	2.43	0.156	1.33	15.98
+ ID2= 2 (0067):	1.23	0.073	1.42	16.25
=====				
ID = 3 (0068):	3.67	0.224	1.33	16.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0070)			
ID= 1 DT= 5.0 min			
	Area (ha)=	3.48	Curve Number (CN)= 65.0
	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.16	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.189 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.434
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

CALIB			
NASHYD (0071)			
ID= 1 DT= 5.0 min			
	Area (ha)=	1.74	Curve Number (CN)= 65.0
	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.11	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.104 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.254
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.264

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

ADD HYD (0069)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0068):	3.67	0.224	1.33	16.07	
+ ID2= 2 (0070):	3.48	0.189	1.50	16.43	
=====					
ID = 3 (0069):	7.14	0.399	1.42	16.25	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0069):	7.14	0.399	1.42	16.25	
+ ID2= 2 (0071):	1.74	0.104	1.42	16.25	
=====					
ID = 1 (0069):	8.88	0.503	1.42	16.25	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0073)	Area (ha)=	3.30	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.16		

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.179 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.437
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.267

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

CALIB				
NASHYD (0074)	Area (ha)=	1.80	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.11		

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.108 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 16.229
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.264

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

ADD HYD (0072)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0069):	8.88	0.503	1.42	16.25	
+ ID2= 2 (0073):	3.30	0.179	1.50	16.44	
=====					
ID = 3 (0072):	12.18	0.672	1.42	16.30	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0072):	12.18	0.672	1.42	16.30	
+ ID2= 2 (0074):	1.80	0.108	1.42	16.23	
=====					
ID = 1 (0072):	13.98	0.780	1.42	16.29	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
=====
V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL
000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000
Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.
```

***** 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\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\37c
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\37c

DATE: 05/31/2022

TIME: 04:04:10

USER:

COMMENTS: _____

```
*****
** SIMULATION : Cavan 5 Year **
*****
```

CHICAGO STORM	IDF curve parameters: A=1098.000
Ptotal= 44.88 mm	B= 10.100
	C= 0.830
used in: INTENSITY = A / (t + B)^C	
Duration of storm = 4.00 hrs	
Storm time step = 10.00 min	
Time to peak ratio = 0.33	

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.66	1.00	26.50	2.00	7.15	3.00	3.24
0.17	3.11	1.17	90.98	2.17	5.94	3.17	2.98
0.33	3.75	1.33	34.82	2.33	5.08	3.33	2.76
0.50	4.75	1.50	18.23	2.50	4.44	3.50	2.57
0.67	6.53	1.67	12.10	2.67	3.95	3.67	2.41
0.83	10.53	1.83	9.00	2.83	3.56	3.83	2.26

CALIB							
NASHYD (0003)	Area (ha)=	2.64	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.11					

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.082 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.821
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.197

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

CALIB							
NASHYD (0083)	Area (ha)=	5.12	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.22					

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.123 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.991
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

(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 (0003):	2.64	0.082	1.42	8.82			
+ ID2= 2 (0083):	5.12	0.123	1.58	8.99			
ID = 3 (0002):	7.76	0.194	1.50	8.93			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0005)	Area (ha)=	3.75	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.23					

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.994
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB							
NASHYD (0084)	Area (ha)=	2.24	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.15					

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.063 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.956
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	7.76	0.194	1.50	8.93
+ ID2= 2 (0005):	3.75	0.088	1.58	8.99
=====				
ID = 3 (0004):	11.51	0.278	1.50	8.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	11.51	0.278	1.50	8.95
+ ID2= 2 (0084):	2.24	0.063	1.50	8.96
=====				
ID = 1 (0004):	13.75	0.341	1.50	8.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 5.53 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.120 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 8.998
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

(i) 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 (0004):	13.75	0.341	1.50	8.95
+ ID2= 2 (0007):	5.53	0.120	1.67	9.00
=====				
ID = 3 (0006):	19.28	0.447	1.50	8.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0009)
ID= 1 DT= 5.0 min

Area (ha)= 9.72 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.272 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.959
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB
NASHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 1.91 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.08

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.070 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 8.454
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.188

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

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 6.10 Curve Number (CN)= 65.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.169 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.963
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0011)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 +	2 = 3				
ID1= 1 (0010):		1.91	0.070	1.33	8.45
+ ID2= 2 (0012):		6.10	0.169	1.50	8.96
=====					
ID = 3 (0011):		8.01	0.219	1.50	8.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0014)				Area (ha)= 7.32		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
				U.H. Tp(hrs)= 0.14			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.209 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.943
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.199

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

ADD HYD (0013)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0011):	8.01	0.219	1.50	8.84	
+ ID2= 2 (0014):	7.32	0.209	1.50	8.94	
=====					
ID = 3 (0013):	15.33	0.428	1.50	8.89	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0016)				Area (ha)= 6.31		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
				U.H. Tp(hrs)= 0.15			

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.178 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.951
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.199

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

ADD HYD (0015)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0013):	15.33	0.428	1.50	8.89	
+ ID2= 2 (0016):	6.31	0.178	1.50	8.95	
=====					
ID = 3 (0015):	21.64	0.607	1.50	8.91	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0015):	21.64	0.607	1.50	8.91	
+ ID2= 2 (0006):	19.28	0.447	1.50	8.97	
=====					
ID = 3 (0008):	40.92	1.054	1.50	8.94	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0008):	40.92	1.054	1.50	8.94	
+ ID2= 2 (0009):	9.72	0.272	1.50	8.96	
=====					
ID = 1 (0008):	50.64	1.326	1.50	8.94	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0017)				Area (ha)= 33.00		Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min				Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
				U.H. Tp(hrs)= 0.22			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 0.783 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.993
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB			
NASHYD (0054)	Area (ha)= 133.44	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.71		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 0.612 (i)
TIME TO PEAK (hrs)= 4.750
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB			
NASHYD (0057)	Area (ha)= 242.32	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.36		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 1.851 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB			
NASHYD (0058)	Area (ha)= 351.72	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.98		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 2.055 (i)
TIME TO PEAK (hrs)= 4.000
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0059)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0054):	133.44	0.612	4.75	9.00
+ ID2= 2 (0057):	242.32	1.851	3.17	9.00
ID = 3 (0059):	375.76	2.298	3.33	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0059):	375.76	2.298	3.33	9.00
+ ID2= 2 (0058):	351.72	2.055	4.00	9.00
ID = 1 (0059):	727.48	4.290	3.67	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	33.00	0.783	1.58	8.99
+ ID2= 2 (0059):	727.48	4.290	3.67	9.00
ID = 3 (0060):	760.48	4.392	3.58	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0019)	Area (ha)= 11.67	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.23		

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 0.274 (i)
 TIME TO PEAK (hrs)= 1.583
 RUNOFF VOLUME (mm)= 8.994
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.200

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

CALIB							
NASHYD (0036)	Area (ha)=	5.65	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.16					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.158 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 8.960
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.200

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

CALIB							
NASHYD (0038)	Area (ha)=	10.22	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.38					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.180 (i)
 TIME TO PEAK (hrs)= 1.833
 RUNOFF VOLUME (mm)= 9.003
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.201

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

CALIB							
NASHYD (0039)	Area (ha)=	9.34	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.21					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.226 (i)
 TIME TO PEAK (hrs)= 1.583
 RUNOFF VOLUME (mm)= 8.991
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0037)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0036):	5.65	0.158	1.50	8.96	
+ ID2= 2 (0038):	10.22	0.180	1.83	9.00	
ID = 3 (0037):	15.87	0.290	1.67	8.99	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0037):	15.87	0.290	1.67	8.99	
+ ID2= 2 (0039):	9.34	0.226	1.58	8.99	
ID = 1 (0037):	25.21	0.516	1.58	8.99	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0041)	Area (ha)=	22.97	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.72					

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.272 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB			
NASHYD (0042)	Area (ha)=	9.47	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.34	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.179 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 9.002
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0040)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	25.21	0.516	1.58	8.99
+ ID2= 2 (0041):	22.97	0.272	2.25	9.00
ID = 3 (0040):	48.18	0.649	1.67	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	48.18	0.649	1.67	9.00
+ ID2= 2 (0042):	9.47	0.179	1.75	9.00
ID = 1 (0040):	57.65	0.827	1.75	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0044)	Area (ha)=	8.60	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.26	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.187 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 8.998
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB			
NASHYD (0045)	Area (ha)=	39.90	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.96	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 0.387 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	57.65	0.827	1.75	9.00
+ ID2= 2 (0044):	8.60	0.187	1.67	9.00
ID = 3 (0043):	66.24	1.011	1.67	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
1 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	66.24	1.011	1.67	9.00
+ ID2= 2 (0045):	39.90	0.387	2.58	9.00
=====				
ID = 1 (0043):	106.15	1.190	1.83	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0047)
ID= 1 DT= 5.0 min

Area (ha)=	9.43	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.33		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)=	0.182 (i)
TIME TO PEAK (hrs)=	1.750
RUNOFF VOLUME (mm)=	9.002
TOTAL RAINFALL (mm)=	44.883
RUNOFF COEFFICIENT =	0.201

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

ADD HYD (0046)
1 + 2 = 3

ID1= 1 (0043):	106.15	1.190	1.83	9.00
+ ID2= 2 (0047):	9.43	0.182	1.75	9.00
=====				
ID = 3 (0046):	115.58	1.365	1.83	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0049)
ID= 1 DT= 5.0 min

Area (ha)=	6.91	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.34		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)=	0.129 (i)
TIME TO PEAK (hrs)=	1.750
RUNOFF VOLUME (mm)=	9.002
TOTAL RAINFALL (mm)=	44.883
RUNOFF COEFFICIENT =	0.201

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

ADD HYD (0048)
1 + 2 = 3

ID1= 1 (0046):	115.58	1.365	1.83	9.00
+ ID2= 2 (0049):	6.91	0.129	1.75	9.00
=====				
ID = 3 (0048):	122.49	1.494	1.75	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0051)
ID= 1 DT= 5.0 min

Area (ha)=	6.04	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.35		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)=	0.111 (i)
TIME TO PEAK (hrs)=	1.750
RUNOFF VOLUME (mm)=	9.002
TOTAL RAINFALL (mm)=	44.883
RUNOFF COEFFICIENT =	0.201

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

CALIB
NASHYD (0053)
ID= 1 DT= 5.0 min

Area (ha)=	6.30	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.20		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.988
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0050) 1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0048):	122.49	1.494	1.75	9.00	
+ ID2= 2 (0051):	6.04	0.111	1.75	9.00	
=====					
ID = 3 (0050):	128.53	1.606	1.75	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050) 3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0050):		128.53	1.606	1.75	9.00
+ ID2= 2 (0053):		6.30	0.155	1.58	8.99
=====					
ID = 1 (0050):		134.83	1.732	1.75	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		11.67	0.274	1.58	8.99
+ ID2= 2 (0050):		134.83	1.732	1.75	9.00
=====					
ID = 3 (0018):		146.50	1.972	1.75	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018) 3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0018):	146.50	1.972	1.75	9.00	
+ ID2= 2 (0060):	760.48	4.392	3.58	9.00	
=====					
ID = 1 (0018):	906.97	5.132	3.33	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0021)	Area (ha)=	4.50	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.922
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.199

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

CALIB			
NASHYD (0024)			
ID= 1 DT= 5.0 min			
Area (ha)=	2.57	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.23		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.060 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.994
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0020) 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0018):		906.97	5.132	3.33	9.00
+ ID2= 2 (0021):		4.50	0.131	1.42	8.92
=====					
ID = 3 (0020):		911.47	5.147	3.33	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020) 3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):		911.47	5.147	3.33	9.00
+ ID2= 2 (0024):		2.57	0.060	1.58	8.99
=====					
ID = 1 (0020):		914.04	5.156	3.33	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0023)		Area (ha)=	4.40	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.21		

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.108 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 8.989
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB							
NASHYD	(0025)	Area	(ha)=	10.27	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.38				

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.180 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 9.003
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0022)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0020):	914.04	5.156	3.33	9.00	
+ ID2= 2 (0023):	4.40	0.108	1.58	8.99	
ID = 3 (0022):	918.45	5.172	3.33	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022)					
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0022):	918.45	5.172	3.33	9.00	
+ ID2= 2 (0025):	10.27	0.180	1.83	9.00	
ID = 1 (0022):	928.72	5.216	3.33	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD	(0027)	Area	(ha)=	13.51	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.27				

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.289 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 8.999
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB							
NASHYD	(0028)	Area	(ha)=	4.77	Curve Number	(CN)=	65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
		U.H. Tp(hrs)=	0.42				

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.079 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 9.003
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0026)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0022):	928.72	5.216	3.33	9.00	
+ ID2= 2 (0027):	13.51	0.289	1.67	9.00	
ID = 3 (0026):	942.23	5.268	3.25	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0026):	942.23	5.268	3.25	9.00
+ ID2= 2 (0028):	4.77	0.079	1.83	9.00
ID = 1 (0026):	947.00	5.291	3.25	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0030)	Area	(ha)=	5.98	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.19		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.153 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.983
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB				
NASHYD (0031)	Area	(ha)=	18.74	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.19		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 0.480 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.983
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

ADD HYD (0029)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0026):	947.00	5.291	3.25	9.00
+ ID2= 2 (0030):	5.98	0.153	1.50	8.98
ID = 3 (0029):	952.98	5.313	3.25	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0029):	952.98	5.313	3.25	9.00
+ ID2= 2 (0031):	18.74	0.480	1.50	8.98
ID = 1 (0029):	971.72	5.380	3.25	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0034)	Area	(ha)=	10.09	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.29		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.209 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 9.000
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB				
NASHYD (0035)	Area	(ha)=	4.98	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.146 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.918
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.199

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

ADD HYD (0033)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0029):	971.72	5.380	3.25	9.00	
+ ID2= 2 (0034):	10.09	0.209	1.67	9.00	
=====					
ID = 3 (0033):	981.81	5.420	3.25	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)					
3 + 2 = 1					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0033):	981.81	5.420	3.25	9.00	
+ ID2= 2 (0035):	4.98	0.146	1.42	8.92	
=====					
ID = 1 (0033):	986.79	5.438	3.17	9.00	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0061)			
ID= 1 DT= 5.0 min			
Area (ha)=	2.71	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.06		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.103 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 7.578
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.169

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

CALIB NASHYD (0063)			
ID= 1 DT= 5.0 min			
Area (ha)=	4.48	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.06		

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

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

0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.171 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 7.726
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.172

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

ADD HYD (0065)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0061):	2.71	0.103	1.33	7.58	
+ ID2= 2 (0063):	4.48	0.171	1.33	7.73	
=====					
ID = 3 (0065):	7.19	0.274	1.33	7.67	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0062)			
ID= 1 DT= 5.0 min			
Area (ha)=	2.00	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.06		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.076 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 7.691
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.171

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

ADD HYD (0064)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0062):	2.00	0.076	1.33	7.69	
+ ID2= 2 (0065):	7.19	0.274	1.33	7.67	
=====					
ID = 3 (0064):	9.19	0.350	1.33	7.67	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0066)	Area	(ha)= 2.43	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.09		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.081 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 8.713
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.194

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

CALIB					
NASHYD	(0067)	Area	(ha)= 1.23	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.038 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.857
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.197

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

ADD HYD (0068)				
1 + 2 = 3				
ID1= 1 (0066):	2.43	0.081	1.33	8.71
+ ID2= 2 (0067):	1.23	0.038	1.42	8.86
ID = 3 (0068):	3.67	0.116	1.33	8.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0070)	Area	(ha)= 3.48	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.16		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.097 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.959
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB					
NASHYD	(0071)	Area	(ha)= 1.74	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.054 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.862
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.197

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

ADD HYD (0069)				
1 + 2 = 3				
ID1= 1 (0068):	3.67	0.116	1.33	8.76
+ ID2= 2 (0070):	3.48	0.097	1.50	8.96
ID = 3 (0069):	7.14	0.206	1.42	8.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0069):	7.14	0.206	1.42	8.86
+ ID2= 2 (0071):	1.74	0.054	1.42	8.86
ID = 1 (0069):	8.88	0.260	1.42	8.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0073)	Area	(ha)=	3.30	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.16		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.092 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.961
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB				
NASHYD (0074)	Area	(ha)=	1.80	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.11		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.056 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 8.848
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.197

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

ADD HYD (0072)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0069):	8.88	0.260	1.42	8.86
+ ID2= 2 (0073):	3.30	0.092	1.50	8.96
ID = 3 (0072):	12.18	0.346	1.42	8.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0072):	12.18	0.346	1.42	8.89
+ ID2= 2 (0074):	1.80	0.056	1.42	8.85
ID = 1 (0072):	13.98	0.402	1.42	8.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
=====
V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\Se1f.
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\Se1f.

DATE: 05/31/2022

TIME: 04:04:10

USER:

COMMENTS: _____

** SIMULATION : Cavan 50 Year **

CHICAGO STORM	IDF curve parameters: A=2200.000
Ptotal= 71.00 mm	B= 14.600
	C= 0.870
used in:	INTENSITY = A / (t + B)^C
Duration of storm	= 4.00 hrs
Storm time step	= 10.00 min
Time to peak ratio	= 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.80	1.00	45.14	2.00	11.57	3.00	4.75
0.17	4.53	1.17	135.62	2.17	9.41	3.17	4.32
0.33	5.61	1.33	58.97	2.33	7.90	3.33	3.96
0.50	7.33	1.50	31.37	2.50	6.79	3.50	3.65
0.67	10.47	1.67	20.48	2.67	5.95	3.67	3.39
0.83	17.66	1.83	14.89	2.83	5.28	3.83	3.16

CALIB					
NASHYD	(0003)	Area	(ha)= 2.64	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.11		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.201 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.043
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.296

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

CALIB					
NASHYD	(0083)	Area	(ha)= 5.12	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.22		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.307 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.450
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0002)					
1 + 2 = 3					
ID1= 1 (0003):	2.64	0.201	1.42	21.04	
+ ID2= 2 (0083):	5.12	0.307	1.58	21.45	
ID = 3 (0002):	7.76	0.483	1.50	21.31	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0005)	Area	(ha)= 3.75	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.23		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.220 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.455
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD	(0084)	Area	(ha)= 2.24	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.15		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.156 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.366
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

ADD HYD (0004)					
1 + 2 = 3					
ID1= 1 (0002):	7.76	0.483	1.50	21.31	
+ ID2= 2 (0005):	3.75	0.220	1.58	21.46	
ID = 3 (0004):	11.51	0.693	1.50	21.36	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0004):	11.51	0.693	1.50	21.36
+ ID2= 2 (0084):	2.24	0.156	1.50	21.37
ID = 1 (0004):	13.75	0.849	1.50	21.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0007)	Area	(ha)=	5.53	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		0.26	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.300 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 21.466
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

(i) 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 (0004):	13.75	0.849	1.50	21.36
+ ID2= 2 (0007):	5.53	0.300	1.67	21.47
ID = 3 (0006):	19.28	1.118	1.50	21.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0009)	Area	(ha)=	9.72	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		0.16	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 0.672 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.371
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

CALIB				
NASHYD (0010)	Area	(ha)=	1.91	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		0.08	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.169 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 20.167
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.284

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

CALIB				
NASHYD (0012)	Area	(ha)=	6.10	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		0.16	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.419 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.382
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

ADD HYD (0011)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0010):	1.91	0.169	1.33	20.17
+ ID2= 2 (0012):	6.10	0.419	1.50	21.38
=====				
ID = 3 (0011):	8.01	0.542	1.50	21.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0014)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	7.32	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.14		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.515 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.334
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.300

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

ADD HYD (0013)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):	8.01	0.542	1.50	21.09
+ ID2= 2 (0014):	7.32	0.515	1.50	21.33
=====				
ID = 3 (0013):	15.33	1.057	1.50	21.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0016)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	6.31	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.15		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.440 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.354
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

ADD HYD (0015)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0013):	15.33	1.057	1.50	21.21
+ ID2= 2 (0016):	6.31	0.440	1.50	21.35
=====				
ID = 3 (0015):	21.64	1.498	1.50	21.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0015):	21.64	1.498	1.50	21.25
+ ID2= 2 (0006):	19.28	1.118	1.50	21.39
=====				
ID = 3 (0008):	40.92	2.616	1.50	21.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0008):	40.92	2.616	1.50	21.32
+ ID2= 2 (0009):	9.72	0.672	1.50	21.37
=====				
ID = 1 (0008):	50.64	3.288	1.50	21.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0017)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	33.00	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.22		

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 1.953 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.453
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD	(0054)	Area	(ha)= 133.44	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	2.71		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 1.471 (i)
TIME TO PEAK (hrs)= 4.667
RUNOFF VOLUME (mm)= 21.481
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

CALIB					
NASHYD	(0057)	Area	(ha)= 242.32	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	1.36		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 4.552 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 21.481
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

CALIB					
NASHYD	(0058)	Area	(ha)= 351.72	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	1.98		

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

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

0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 4.978 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 21.481
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

ADD HYD (0059)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0054):	133.44	1.471	4.67	21.48
+ ID2= 2 (0057):	242.32	4.552	3.08	21.48
ID = 3 (0059):	375.76	5.620	3.25	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0059):	375.76	5.620	3.25	21.48
+ ID2= 2 (0058):	351.72	4.978	3.83	21.48
ID = 1 (0059):	727.48	10.438	3.50	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0017):	33.00	1.953	1.58	21.45
+ ID2= 2 (0059):	727.48	10.438	3.50	21.48
ID = 3 (0060):	760.48	10.656	3.50	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0019)	Area	(ha)= 11.67	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.23		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 0.684 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.456
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD (0036)	Area (ha)=	5.65	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.16			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.390 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.374
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

CALIB					
NASHYD (0038)	Area (ha)=	10.22	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.38			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.451 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 21.477
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

CALIB					
NASHYD (0039)	Area (ha)=	9.34	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.21			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.563 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.448
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0037)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0036):	5.65	0.390	1.50	21.37
+ ID2= 2 (0038):	10.22	0.451	1.83	21.48
ID = 3 (0037):	15.87	0.730	1.58	21.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0037):	15.87	0.730	1.58	21.44
+ ID2= 2 (0039):	9.34	0.563	1.58	21.45
ID = 1 (0037):	25.21	1.293	1.58	21.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0041)	Area (ha)=	22.97	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.72			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 0.680 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 21.480
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

CALIB			
NASHYD (0042)	Area (ha)= 9.47	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.34		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.450 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 21.475
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0040)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	25.21	1.293	1.58	21.44
+ ID2= 2 (0041):	22.97	0.680	2.25	21.48
ID = 3 (0040):	48.18	1.638	1.67	21.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	48.18	1.638	1.67	21.46
+ ID2= 2 (0042):	9.47	0.450	1.75	21.48
ID = 1 (0040):	57.65	2.079	1.75	21.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0044)	Area (ha)= 8.60	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

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

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

0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.466 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 21.466
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB			
NASHYD (0045)	Area (ha)= 39.90	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.96		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 0.962 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 21.481
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	57.65	2.079	1.75	21.46
+ ID2= 2 (0044):	8.60	0.466	1.67	21.47
ID = 3 (0043):	66.24	2.545	1.67	21.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	66.24	2.545	1.67	21.46
+ ID2= 2 (0045):	39.90	0.962	2.58	21.48
ID = 1 (0043):	106.15	2.993	1.83	21.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0047)	Area (ha)=	9.43	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.33			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.455 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 21.475
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0046)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0043):	106.15	2.993	1.83	21.47	
+ ID2= 2 (0047):	9.43	0.455	1.75	21.47	
ID = 3 (0046):	115.58	3.442	1.75	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0049)	Area (ha)=	6.91	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.34			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.324 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 21.476
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0048)					
1 + 2 = 3					
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0046):	115.58	3.442	1.75	21.47	
+ ID2= 2 (0049):	6.91	0.324	1.75	21.48	
ID = 3 (0048):	122.49	3.766	1.75	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0051)	Area (ha)=	6.04	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.35			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.280 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 21.476
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD (0053)	Area (ha)=	6.30	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.20			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.384 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.443
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0050)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0048):	122.49	3.766	1.75	21.47	
+ ID2= 2 (0051):	6.04	0.280	1.75	21.48	
=====					
ID = 3 (0050):	128.53	4.046	1.75	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)					
3 + 2 = 1					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):	128.53	4.046	1.75	21.47	
+ ID2= 2 (0053):	6.30	0.384	1.58	21.44	
=====					
ID = 1 (0050):	134.83	4.359	1.75	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)					
1 + 2 = 3					

	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0019):	11.67	0.684	1.58	21.46	
+ ID2= 2 (0050):	134.83	4.359	1.75	21.47	
=====					
ID = 3 (0018):	146.50	4.964	1.67	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)					
3 + 2 = 1					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0018):		146.50	4.964	1.67	21.47
+ ID2= 2 (0060):		760.48	10.656	3.50	21.48
=====					
ID = 1 (0018):		906.97	12.407	3.25	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0021)					
ID= 1 DT= 5.0 min					

Area	(ha)=	4.50	Curve Number	(CN)= 65.0	
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00	
U.H. Tp(hrs)=	0.13				

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.324 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.285
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.300

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

CALIB			
NASHYD (0024)	Area (ha)=	2.57	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
U.H. Tp(hrs)=		0.23	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.150 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.456
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD (0020)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0018):	906.97	12.407	3.25	21.48	
+ ID2= 2 (0021):	4.50	0.324	1.42	21.29	
=====					
ID = 3 (0020):	911.47	12.438	3.25	21.48	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)					
3 + 2 = 1					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0020):		911.47	12.438	3.25	21.48
+ ID2= 2 (0024):		2.57	0.150	1.58	21.46
=====					
ID = 1 (0020):		914.04	12.458	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0023)	Area	(ha)=	4.40	Curve Number (CN)= 65.0
ID= 1	DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp	(hrs)=	0.21	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.268 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.444
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB			
NASHYD (0025)	Area (ha)= 10.27	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.38		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.451 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 21.478
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

ADD HYD (0022)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	914.04	12.458	3.17	21.48
+ ID2= 2 (0023):	4.40	0.268	1.58	21.44
ID = 3 (0022):	918.45	12.493	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0022):	918.45	12.493	3.17	21.48
+ ID2= 2 (0025):	10.27	0.451	1.83	21.48
ID = 1 (0022):	928.72	12.601	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0027)	Area (ha)= 13.51	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.27		

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

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

0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 0.723 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 21.468
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB			
NASHYD (0028)	Area (ha)= 4.77	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.42		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.198 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 21.478
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.303

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

ADD HYD (0026)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	928.72	12.601	3.17	21.48
+ ID2= 2 (0027):	13.51	0.723	1.67	21.47
ID = 3 (0026):	942.23	12.717	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0026):	942.23	12.717	3.17	21.48
+ ID2= 2 (0028):	4.77	0.198	1.83	21.48
ID = 1 (0026):	947.00	12.770	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0030)	Area	(ha)=	5.98	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.19	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.380 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.430
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD	(0031)	Area	(ha)=	18.74	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.19	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 1.195 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.429
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

ADD HYD	(0029)				
1 + 2 = 3		AREA		QPEAK	
		(ha)		(cms)	
ID1= 1 (0026):		947.00	12.770	3.17	21.48
+ ID2= 2 (0030):		5.98	0.380	1.50	21.43
ID = 3 (0029):		952.98	12.817	3.17	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD	(0029)				
3 + 2 = 1		AREA		QPEAK	
		(ha)		(cms)	
ID1= 3 (0029):		952.98	12.817	3.17	21.48
+ ID2= 2 (0031):		18.74	1.195	1.50	21.43
ID = 1 (0029):		971.72	12.966	3.08	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0034)	Area	(ha)=	10.09	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.29	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.524 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 21.471
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.302

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

CALIB					
NASHYD	(0035)	Area	(ha)=	4.98	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.13	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.361 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.274
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.300

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

ADD HYD (0033)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0029):	971.72	12.966	3.08	21.48	
+ ID2= 2 (0034):	10.09	0.524	1.67	21.47	
=====					
ID = 3 (0033):	981.81	13.061	3.08	21.48	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0033):	981.81	13.061	3.08	21.48	
+ ID2= 2 (0035):	4.98	0.361	1.42	21.27	
=====					
ID = 1 (0033):	986.79	13.099	3.08	21.47	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0061)	Area (ha)=	2.71	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.06	

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57
0.167	3.80	1.167	45.14	2.167	11.57
0.250	4.53	1.250	135.62	2.250	9.41
0.333	4.53	1.333	135.62	2.333	9.41
0.417	5.61	1.417	58.97	2.417	7.90
0.500	5.61	1.500	58.97	2.500	7.90
0.583	7.33	1.583	31.37	2.583	6.79
0.667	7.33	1.667	31.37	2.667	6.79
0.750	10.47	1.750	20.48	2.750	5.95
0.833	10.47	1.833	20.48	2.833	5.95
0.917	17.66	1.917	14.89	2.917	5.28
1.000	17.66	2.000	14.89	3.000	5.28

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.243 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 18.077
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.255

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

CALIB				
NASHYD (0063)	Area (ha)=	4.48	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.06		

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57
0.167	3.80	1.167	45.14	2.167	11.57
0.250	4.53	1.250	135.62	2.250	9.41
0.333	4.53	1.333	135.62	2.333	9.41
0.417	5.61	1.417	58.97	2.417	7.90
0.500	5.61	1.500	58.97	2.500	7.90
0.583	7.33	1.583	31.37	2.583	6.79
0.667	7.33	1.667	31.37	2.667	6.79
0.750	10.47	1.750	20.48	2.750	5.95
0.833	10.47	1.833	20.48	2.833	5.95
0.917	17.66	1.917	14.89	2.917	5.28
1.000	17.66	2.000	14.89	3.000	5.28

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.404 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 18.432
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.260

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

ADD HYD (0065)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0061):	2.71	0.243	1.33	18.08	
+ ID2= 2 (0063):	4.48	0.404	1.33	18.43	
=====					
ID = 3 (0065):	7.19	0.647	1.33	18.30	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0062)	Area (ha)=	2.00	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.06	

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57
0.167	3.80	1.167	45.14	2.167	11.57
0.250	4.53	1.250	135.62	2.250	9.41
0.333	4.53	1.333	135.62	2.333	9.41
0.417	5.61	1.417	58.97	2.417	7.90
0.500	5.61	1.500	58.97	2.500	7.90
0.583	7.33	1.583	31.37	2.583	6.79
0.667	7.33	1.667	31.37	2.667	6.79
0.750	10.47	1.750	20.48	2.750	5.95
0.833	10.47	1.833	20.48	2.833	5.95
0.917	17.66	1.917	14.89	2.917	5.28
1.000	17.66	2.000	14.89	3.000	5.28

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.180 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 18.347
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.258

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

ADD HYD (0064)					
1 + 2 = 3					

	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0062):	2.00	0.180	1.33	18.35	
+ ID2= 2 (0065):	7.19	0.647	1.33	18.30	
=====					
ID = 3 (0064):	9.19	0.826	1.33	18.31	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0066)	Area (ha)=	2.43	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.09			

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

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

0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.198 (i)
TIME TO PEAK (hrs)= 1.333
RUNOFF VOLUME (mm)= 20.786
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.293

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

CALIB							
NASHYD (0067)	Area (ha)=	1.23	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.11					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.093 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.128
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.298

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

ADD HYD (0068)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0066):	2.43	0.198	1.33	20.79	
+ ID2= 2 (0067):	1.23	0.093	1.42	21.13	
ID = 3 (0068):	3.67	0.286	1.33	20.90	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0070)	Area (ha)=	3.48	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.16					

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

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

0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.240 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.373
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

CALIB							
NASHYD (0071)	Area (ha)=	1.74	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.11					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.141
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.298

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

ADD HYD (0069)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0068):	3.67	0.286	1.33	20.90	
+ ID2= 2 (0070):	3.48	0.240	1.50	21.37	
ID = 3 (0069):	7.14	0.507	1.42	21.13	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0069):	7.14	0.507	1.42	21.13	
+ ID2= 2 (0071):	1.74	0.131	1.42	21.14	
ID = 1 (0069):	8.88	0.639	1.42	21.13	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0073)
ID= 1 DT= 5.0 min

Area (ha)= 3.30
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.16

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75				
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75				
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32				
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32				
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96				
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96				
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65				
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65				
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39				
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39				
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16				
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16				

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.227 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 21.378
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.301

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

CALIB
NASHYD (0074)
ID= 1 DT= 5.0 min

Area (ha)= 1.80
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.11

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75				
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75				
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32				
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32				
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96				
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96				
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65				
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65				
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39				
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39				
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16				
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16				

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.137 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 21.107
TOTAL RAINFALL (mm)= 70.997
RUNOFF COEFFICIENT = 0.297

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

ADD HYD (0072)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0069):	8.88	0.639	1.42	21.13
+ ID2= 2 (0073):	3.30	0.227	1.50	21.38
ID = 3 (0072):	12.18	0.854	1.42	21.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0072):	12.18	0.854	1.42	21.20
+ ID2= 2 (0074):	1.80	0.137	1.42	21.11
ID = 1 (0072):	13.98	0.991	1.42	21.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T H H Y M M OOO

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\79ec
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\79ec

DATE: 05/31/2022

TIME: 04:04:11

USER:

COMMENTS: _____

** SIMULATION : PETERBOROUGH 100 YEAR **

READ STORM

Filename: C:\Users\matthew.holmes\AppData\Local\Temp\18d2b306-705f-4625-82a3-2affef3b50f5\6dc24be0
Comments: PETERBOROUGH-SCS-6HR-100YR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	1.75	9.00	3.50	19.80	5.25	3.60
0.25	3.60	2.00	9.00	3.75	9.00	5.50	3.60
0.50	3.60	2.25	10.80	4.00	9.00	5.75	3.60
0.75	5.40	2.50	10.80	4.25	7.20	6.00	3.60
1.00	5.40	2.75	53.90	4.50	7.20		
1.25	5.40	3.00	140.20	4.75	5.40		
1.50	5.40	3.25	19.80	5.00	5.40		

CALIB
NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.64
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.11

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40				
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40				

0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.943

PEAK FLOW (cms)= 0.410 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 31.870
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.354

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

CALIB							
NASHYD (0083)	Area (ha)=	5.12	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.22					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.907

PEAK FLOW (cms)= 0.540 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.486
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

ADD HYD (0002)					
1 + 2 = 3					
ID1= 1 (0003):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0083):	2.64	0.410	3.25	31.87	
	5.12	0.540	3.33	32.49	
ID = 3 (0002):	7.76	0.887	3.25	32.28	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0005)	Area (ha)=	3.75	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.23					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.634

PEAK FLOW (cms)= 0.383 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.494
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

CALIB							
NASHYD (0084)	Area (ha)=	2.24	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.15					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.560

PEAK FLOW (cms)= 0.286 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.358
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

(i) 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 (0002):	7.76	0.887	3.25	32.28	
+ ID2= 2 (0005):	3.75	0.383	3.33	32.49	
=====					
ID = 3 (0004):	11.51	1.218	3.25	32.35	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0004):	11.51	1.218	3.25	32.35	
+ ID2= 2 (0084):	2.24	0.286	3.25	32.36	
=====					
ID = 1 (0004):	13.75	1.504	3.25	32.35	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0007)	Area (ha)=	5.53	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.26			

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 0.809

PEAK FLOW (cms)= 0.506 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 32.511
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

(i) 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 (0004):	13.75	1.504	3.25	32.35	
+ ID2= 2 (0007):	5.53	0.506	3.42	32.51	
=====					
ID = 3 (0006):	19.28	1.986	3.33	32.40	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0009)	Area (ha)=	9.72	Curve Number (CN)=	65.0	

ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 2.395

PEAK FLOW (cms)= 1.226 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.367
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

CALIB					
NASHYD (0010)	Area (ha)=	1.91	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.08			

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

----- TRANSFORMED HYETOGRAPH -----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 0.933

PEAK FLOW (cms)= 0.315 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 30.543
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.340

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

CALIB					
NASHYD	(0012)	Area	(ha)=	6.10	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.16	

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

--- TRANSFORMED HYETOGRAPH ---					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 1.465

PEAK FLOW (cms)= 0.755 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.382
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

ADD HYD (0011)					
1 + 2 = 3					
ID1= 1 (0010):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0012):	1.91	0.315	3.25	30.54	
	6.10	0.755	3.25	32.38	
ID = 3 (0011):	8.01	1.069	3.25	31.94	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0014)	Area	(ha)=	7.32	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.14	

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

--- TRANSFORMED HYETOGRAPH ---					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
				6.25	3.60

1.583 5.40 | 3.167 140.20 | 4.750 7.20 |

Unit Hyd Qpeak (cms)= 1.951

PEAK FLOW (cms)= 0.976 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.310
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.359

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

ADD HYD (0013)					
1 + 2 = 3					
ID1= 1 (0011):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0014):	8.01	1.069	3.25	31.94	
	7.32	0.976	3.25	32.31	
ID = 3 (0013):	15.33	2.046	3.25	32.12	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD	(0016)	Area	(ha)=	6.31	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.15	

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

--- TRANSFORMED HYETOGRAPH ---					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 1.616

PEAK FLOW (cms)= 0.819 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.340
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

ADD HYD (0015)					
1 + 2 = 3					
ID1= 1 (0013):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
+ ID2= 2 (0016):	15.33	2.046	3.25	32.12	
	6.31	0.819	3.25	32.34	
ID = 3 (0015):	21.64	2.865	3.25	32.18	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0008)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	

(ha) (cms) (hrs) (mm)
ID1= 1 (0015): 21.64 2.865 3.25 32.18
+ ID2= 2 (0006): 19.28 1.986 3.33 32.40

ID = 3 (0008): 40.92 4.779 3.25 32.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0008) |
3 + 2 = 1
(ha) (cms) (hrs) (mm)
ID1= 3 (0008): 40.92 4.779 3.25 32.28
+ ID2= 2 (0009): 9.72 1.226 3.25 32.37

ID = 1 (0008): 50.64 6.006 3.25 32.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| NASHYD (0017) | Area (ha)= 33.00 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.00 1.667 5.40 3.250 140.20 4.83 5.40
0.167 0.00 1.750 5.40 3.333 19.80 4.92 5.40
0.250 0.00 1.833 9.00 3.417 19.80 5.00 5.40
0.333 3.60 1.917 9.00 3.500 19.80 5.08 5.40
0.417 3.60 2.000 9.00 3.583 19.80 5.17 5.40
0.500 3.60 2.083 9.00 3.667 19.80 5.25 5.40
0.583 3.60 2.167 9.00 3.750 19.80 5.33 3.60
0.667 3.60 2.250 9.00 3.833 9.00 5.42 3.60
0.750 3.60 2.333 10.80 3.917 9.00 5.50 3.60
0.833 5.40 2.417 10.80 4.000 9.00 5.58 3.60
0.917 5.40 2.500 10.80 4.083 9.00 5.67 3.60
1.000 5.40 2.583 10.80 4.167 9.00 5.75 3.60
1.083 5.40 2.667 10.80 4.250 9.00 5.83 3.60
1.167 5.40 2.750 10.80 4.333 7.20 5.92 3.60
1.250 5.40 2.833 53.90 4.417 7.20 6.00 3.60
1.333 5.40 2.917 53.90 4.500 7.20 6.08 3.60
1.417 5.40 3.000 53.90 4.583 7.20 6.17 3.60
1.500 5.40 3.083 140.20 4.667 7.20 6.25 3.60
1.583 5.40 3.167 140.20 4.750 7.20

Unit Hyd Qpeak (cms)= 5.677

PEAK FLOW (cms)= 3.414 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.491
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

| CALIB |
| NASHYD (0054) | Area (ha)= 133.44 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.71

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.00 1.667 5.40 3.250 140.20 4.83 5.40
0.167 0.00 1.750 5.40 3.333 19.80 4.92 5.40
0.250 0.00 1.833 9.00 3.417 19.80 5.00 5.40
0.333 3.60 1.917 9.00 3.500 19.80 5.08 5.40
0.417 3.60 2.000 9.00 3.583 19.80 5.17 5.40
0.500 3.60 2.083 9.00 3.667 19.80 5.25 5.40
0.583 3.60 2.167 9.00 3.750 19.80 5.33 3.60
0.667 3.60 2.250 9.00 3.833 9.00 5.42 3.60
0.750 3.60 2.333 10.80 3.917 9.00 5.50 3.60

0.833 5.40 2.417 10.80 4.000 9.00 5.58 3.60
0.917 5.40 2.500 10.80 4.083 9.00 5.67 3.60
1.000 5.40 2.583 10.80 4.167 9.00 5.75 3.60
1.083 5.40 2.667 10.80 4.250 9.00 5.83 3.60
1.167 5.40 2.750 10.80 4.333 7.20 5.92 3.60
1.250 5.40 2.833 53.90 4.417 7.20 6.00 3.60
1.333 5.40 2.917 53.90 4.500 7.20 6.08 3.60
1.417 5.40 3.000 53.90 4.583 7.20 6.17 3.60
1.500 5.40 3.083 140.20 4.667 7.20 6.25 3.60
1.583 5.40 3.167 140.20 4.750 7.20

Unit Hyd Qpeak (cms)= 1.881

PEAK FLOW (cms)= 2.162 (i)
TIME TO PEAK (hrs)= 6.417
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

| CALIB |
| NASHYD (0057) | Area (ha)= 242.32 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.36

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.00 1.667 5.40 3.250 140.20 4.83 5.40
0.167 0.00 1.750 5.40 3.333 19.80 4.92 5.40
0.250 0.00 1.833 9.00 3.417 19.80 5.00 5.40
0.333 3.60 1.917 9.00 3.500 19.80 5.08 5.40
0.417 3.60 2.000 9.00 3.583 19.80 5.17 5.40
0.500 3.60 2.083 9.00 3.667 19.80 5.25 5.40
0.583 3.60 2.167 9.00 3.750 19.80 5.33 3.60
0.667 3.60 2.250 9.00 3.833 9.00 5.42 3.60
0.750 3.60 2.333 10.80 3.917 9.00 5.50 3.60
0.833 5.40 2.417 10.80 4.000 9.00 5.58 3.60
0.917 5.40 2.500 10.80 4.083 9.00 5.67 3.60
1.000 5.40 2.583 10.80 4.167 9.00 5.75 3.60
1.083 5.40 2.667 10.80 4.250 9.00 5.83 3.60
1.167 5.40 2.750 10.80 4.333 7.20 5.92 3.60
1.250 5.40 2.833 53.90 4.417 7.20 6.00 3.60
1.333 5.40 2.917 53.90 4.500 7.20 6.08 3.60
1.417 5.40 3.000 53.90 4.583 7.20 6.17 3.60
1.500 5.40 3.083 140.20 4.667 7.20 6.25 3.60
1.583 5.40 3.167 140.20 4.750 7.20

Unit Hyd Qpeak (cms)= 6.805

PEAK FLOW (cms)= 6.717 (i)
TIME TO PEAK (hrs)= 4.750
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

| CALIB |
| NASHYD (0058) | Area (ha)= 351.72 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.00 1.667 5.40 3.250 140.20 4.83 5.40
0.167 0.00 1.750 5.40 3.333 19.80 4.92 5.40
0.250 0.00 1.833 9.00 3.417 19.80 5.00 5.40
0.333 3.60 1.917 9.00 3.500 19.80 5.08 5.40
0.417 3.60 2.000 9.00 3.583 19.80 5.17 5.40
0.500 3.60 2.083 9.00 3.667 19.80 5.25 5.40
0.583 3.60 2.167 9.00 3.750 19.80 5.33 3.60

0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 6.785

PEAK FLOW (cms)= 7.300 (i)
TIME TO PEAK (hrs)= 5.500
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0059)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0054):		133.44	2.162	6.42	32.53
+ ID2= 2 (0057):		242.32	6.717	4.75	32.53
=====					
ID = 3 (0059):		375.76	8.271	4.92	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0059)					
3 + 2 = 1					
		AREA	OPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0059):		375.76	8.271	4.92	32.53
+ ID2= 2 (0058):		351.72	7.300	5.50	32.53
=====					
ID = 1 (0059):		727.48	15.326	5.17	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0017):		33.00	3.414	3.33	32.49
+ ID2= 2 (0059):		727.48	15.326	5.17	32.53
=====					
ID = 3 (0060):		760.48	15.644	5.17	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0019)					
ID= 1 DT= 5.0 min		Area (ha)=	11.67	Curve Number (CN)=	65.0
		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.23		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60

1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.964

PEAK FLOW (cms)= 1.188 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.495
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

CALIB					
NASHYD (0036)	Area (ha)=	5.65	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.16			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.384

PEAK FLOW (cms)= 0.710 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.371
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

CALIB					
NASHYD (0038)		Area (ha)=	10.22	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min		Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
		U.H. Tp(hrs)=	0.38		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60

0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.022

PEAK FLOW (cms)= 0.722 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 32.528
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB					
NASHYD (0039)	Area (ha)=	9.34	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.21			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.683

PEAK FLOW (cms)= 0.996 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.483
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

ADD HYD (0037)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0036):	5.65	0.710	3.25	32.37
+ ID2= 2 (0038):	10.22	0.722	3.50	32.53
=====				
ID = 3 (0037):	15.87	1.273	3.33	32.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0037)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0037):	15.87	1.273	3.33	32.47
+ ID2= 2 (0039):	9.34	0.996	3.33	32.48
=====				

ID = 1 (0037): 25.21 2.269 3.33 32.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0041)	Area (ha)=	22.97	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.72		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.222

PEAK FLOW (cms)= 1.035 (i)
TIME TO PEAK (hrs)= 3.917
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB				
NASHYD (0042)	Area (ha)=	9.47	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.34		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.073

PEAK FLOW (cms)= 0.728 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 32.524

TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0040)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0037):	25.21	2.269	3.33	32.48	
+ ID2= 2 (0041):	22.97	1.035	3.92	32.53	
=====					
ID = 3 (0040):	48.18	2.733	3.33	32.50	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):		48.18	2.733	3.33	32.50
+ ID2= 2 (0042):		9.47	0.728	3.50	32.52
=====					
ID = 1 (0040):		57.65	3.445	3.42	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0044) ID= 1 DT= 5.0 min				Area (ha)= 8.60	Curve Number (CN)= 65.0
				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
				U.H. Tp(hrs)= 0.26	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.786 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 32.511
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB NASHYD (0045) ID= 1 DT= 5.0 min				Area (ha)= 39.90	Curve Number (CN)= 65.0
				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
				U.H. Tp(hrs)= 0.96	

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

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

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.581

PEAK FLOW (cms)= 1.440 (i)
TIME TO PEAK (hrs)= 4.250
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0043)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0040):		57.65	3.445	3.42	32.51
+ ID2= 2 (0044):		8.60	0.786	3.42	32.51
=====					
ID = 3 (0043):		66.24	4.231	3.42	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0043):	66.24	4.231	3.42	32.51	
+ ID2= 2 (0045):	39.90	1.440	4.25	32.53	
=====					
ID = 1 (0043):	106.15	4.831	3.42	32.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0047) ID= 1 DT= 5.0 min				Area (ha)= 9.43	Curve Number (CN)= 65.0
				Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
				U.H. Tp(hrs)= 0.33	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60

1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.102

PEAK FLOW (cms)= 0.741 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 32.523
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0046)
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0043):	106.15	4.831	3.42	32.52
+ ID2= 2 (0047):	9.43	0.741	3.42	32.52
=====				
ID = 3 (0046):	115.58	5.572	3.42	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0049)
ID= 1 DT= 5.0 min

Area	(ha)=	6.91	Curve Number	(CN)= 65.0
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.34			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.765

PEAK FLOW (cms)= 0.524 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 32.525
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0048)
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0046):	115.58	5.572	3.42	32.52
+ ID2= 2 (0049):	6.91	0.524	3.50	32.53
=====				
ID = 3 (0048):	122.49	6.089	3.42	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

NASHYD (0051)	Area	(ha)=	6.04	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.35			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.654

PEAK FLOW (cms)= 0.451 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 32.526
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB
NASHYD (0053)
ID= 1 DT= 5.0 min

Area	(ha)=	6.30	Curve Number	(CN)= 65.0
Ia	(mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.20			

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.179

PEAK FLOW (cms)= 0.687 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.475
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

ADD HYD (0050)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0048):	122.49	6.089	3.42	32.52
+ ID2= 2 (0051):	6.04	0.451	3.50	32.53
=====				
ID = 3 (0050):	128.53	6.530	3.42	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):	128.53	6.530	3.42	32.52
+ ID2= 2 (0053):	6.30	0.687	3.33	32.48
=====				
ID = 1 (0050):	134.83	7.145	3.42	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):	11.67	1.188	3.33	32.49
+ ID2= 2 (0050):	134.83	7.145	3.42	32.52
=====				
ID = 3 (0018):	146.50	8.269	3.42	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0018)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0018):	146.50	8.269	3.42	32.51
+ ID2= 2 (0060):	760.48	15.644	5.17	32.53
=====				
ID = 1 (0018):	906.97	18.204	4.92	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0021)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	4.50	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.292

PEAK FLOW (cms)= 0.629 (i)
TIME TO PEAK (hrs)= 3.250

RUNOFF VOLUME (mm)= 32.237
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.358

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

CALIB				
NASHYD (0024)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	2.57	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.23		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.429

PEAK FLOW (cms)= 0.260 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.496
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

ADD HYD (0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0018):	906.97	18.204	4.92	32.53
+ ID2= 2 (0021):	4.50	0.629	3.25	32.24
=====				
ID = 3 (0020):	911.47	18.250	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0020):	911.47	18.250	4.83	32.53
+ ID2= 2 (0024):	2.57	0.260	3.33	32.50
=====				
ID = 1 (0020):	914.04	18.281	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0023)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	4.40	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.21		

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.816

PEAK FLOW (cms)= 0.478 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.477
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

CALIB NASHYD (0025) ID= 1 DT= 5.0 min	Area (ha)= 10.27 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.38	Curve Number (CN)= 65.0 # of Linear Res.(N)= 3.00
--	---	--

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.020

PEAK FLOW (cms)= 0.722 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 32.528
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0022) 1 + 2 = 3	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	914.04	18.281	4.83	32.53
+ ID2= 2 (0023):	4.40	0.478	3.33	32.48

ID = 3 (0022): 918.45 18.332 4.83 32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0022) 3 + 2 = 1	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0022):	918.45	18.332	4.83	32.53
+ ID2= 2 (0025):	10.27	0.722	3.50	32.53
ID = 1 (0022):	928.72	18.482	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0027) ID= 1 DT= 5.0 min	Area (ha)= 13.51 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.27	Curve Number (CN)= 65.0 # of Linear Res.(N)= 3.00
--	---	--

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.908

PEAK FLOW (cms)= 1.214 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 32.513
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB NASHYD (0028) ID= 1 DT= 5.0 min	Area (ha)= 4.77 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.42	Curve Number (CN)= 65.0 # of Linear Res.(N)= 3.00
--	--	--

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60

1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.431

PEAK FLOW (cms)= 0.313 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 32.529
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0026)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	928.72	18.482	4.83	32.53
+ ID2= 2 (0027):	13.51	1.214	3.42	32.51
=====				
ID = 3 (0026):	942.23	18.648	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0026)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0026):	942.23	18.648	4.83	32.53
+ ID2= 2 (0028):	4.77	0.313	3.58	32.53
=====				
ID = 1 (0026):	947.00	18.724	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0030)	Area (ha)=	5.98	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.19		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.209

PEAK FLOW (cms)= 0.679 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.455
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

CALIB				
NASHYD (0031)	Area (ha)=	18.74	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.19		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 3.807

PEAK FLOW (cms)= 2.132 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 32.454
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.361

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

ADD HYD (0029)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	947.00	18.724	4.83	32.53
+ ID2= 2 (0030):	5.98	0.679	3.33	32.46
=====				
ID = 3 (0029):	952.98	18.793	4.83	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0029):	952.98	18.793	4.83	32.53
+ ID2= 2 (0031):	18.74	2.132	3.33	32.45
=====				
ID = 1 (0029):	971.72	20.063	3.42	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0034)	Area (ha)=	10.09	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.29		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40

0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.343

PEAK FLOW (cms)= 0.875 (i)
TIME TO PEAK (hrs)= 3.417
RUNOFF VOLUME (mm)= 32.517
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB							
NASHYD (0035)	Area (ha)=	4.98	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.13					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.452

PEAK FLOW (cms)= 0.702 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.219
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.358

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

ADD HYD (0033)							
1 + 2 = 3	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)			
ID1= 1 (0029):	971.72	20.063	3.42	32.52			
+ ID2= 2 (0034):	10.09	0.875	3.42	32.52			
ID = 3 (0033):	981.81	20.938	3.42	32.52			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0033)							
3 + 2 = 1	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)			
ID1= 3 (0033):	981.81	20.938	3.42	32.52			
+ ID2= 2 (0035):	4.98	0.702	3.25	32.22			
ID = 1 (0033):	986.79	21.337	3.42	32.52			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0061)	Area (ha)=	2.71	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.06					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.793

PEAK FLOW (cms)= 0.421 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 27.378
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.304

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

CALIB							
NASHYD (0063)	Area (ha)=	4.48	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.06					

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 2.851

PEAK FLOW (cms)= 0.705 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 27.915
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.310

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

ADD HYD (0065)					AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3					(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0061):					2.71	0.421	3.25	27.38
+ ID2= 2 (0063):					2.48	0.705	3.25	27.92
=====								
ID = 3 (0065):					7.19	1.126	3.25	27.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB									
NASHYD	(	0062	)		Area	(ha)=	2.00	Curve Number	(CN)= 65.0
ID= 1	DT=	5.0	min		Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
-----					U.H. Tp	(hrs)=	0.06		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.282

PEAK FLOW (cms)= 0.313 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 27.787
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.309

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

ADD HYD (0064)				
1 + 2 = 3				
ID1= 1 (0062):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0065):	2.00	0.313	3.25	27.79
=====				
ID = 3 (0064):	9.19	1.439	3.25	27.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.989

PEAK FLOW (cms)= 0.392 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 31.480
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.350

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

CALIB									
NASHYD	(	0067	)	Area	(ha)=	1.23	Curve Number	(CN)=	65.0
ID= 1	DT=	5.0 min		Ia	(mm)=	5.00	# of Linear Res.	(N)=	3.00
				U.H. Tp	(hrs)=	0.11			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.414

PEAK FLOW (cms)= 0.187 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 31.999
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.356

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

| ADD HYD (0068)|

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0066):	2.43	0.392	3.25	31.48
+ ID2= 2 (0067):	1.23	0.187	3.25	32.00
ID = 3 (0068):	3.67	0.579	3.25	31.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0070) ID= 1 DT= 5.0 min	Area (ha)= 3.48 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.16	Curve Number (CN)= 65.0 # 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
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 0.853

PEAK FLOW (cms)= 0.437 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.370
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

CALIB NASHYD (0071) ID= 1 DT= 5.0 min	Area (ha)= 1.74 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.11	Curve Number (CN)= 65.0 # 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
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 0.580

PEAK FLOW (cms)= 0.262 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.017
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.356

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

ADD HYD (0069) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0068):	3.67	0.579	3.25	31.65
+ ID2= 2 (0070):	3.48	0.437	3.25	32.37
ID = 3 (0069):	7.14	1.016	3.25	32.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0069):	7.14	1.016	3.25	32.00
+ ID2= 2 (0071):	1.74	0.262	3.25	32.02
ID = 1 (0069):	8.88	1.278	3.25	32.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0073) ID= 1 DT= 5.0 min	Area (ha)= 3.30 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.16	Curve Number (CN)= 65.0 # 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
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.411 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.377
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

CALIB NASHYD (0074) ID= 1 DT= 5.0 min	Area (ha)= 1.80 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.11	Curve Number (CN)= 65.0 # of Linear Res.(N)= 3.00
--	--	--

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.275 (i)

TIME TO PEAK (hrs)= 3.250

RUNOFF VOLUME (mm)= 31.967

TOTAL RAINFALL (mm)= 89.925

RUNOFF COEFFICIENT = 0.355

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

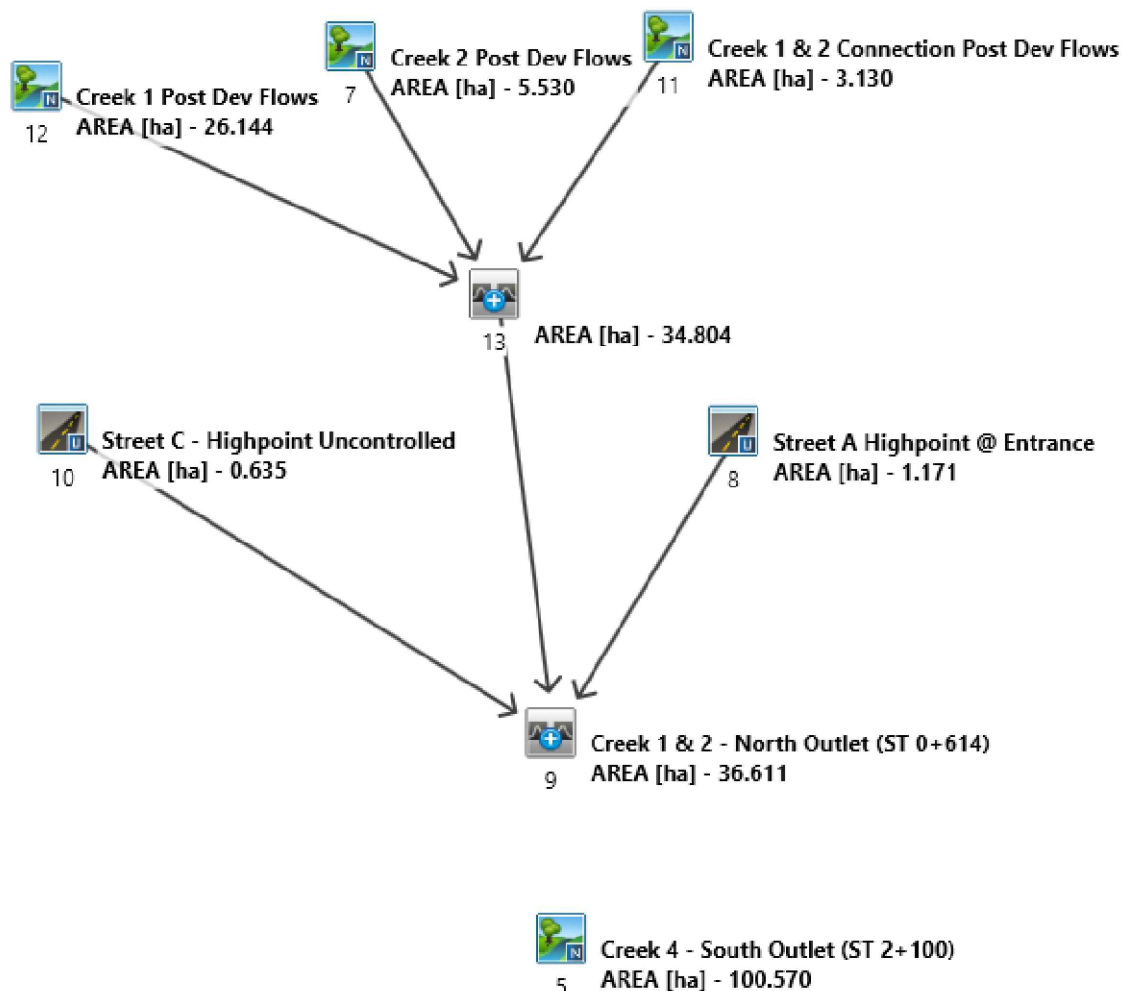
ADD HYD (0072)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0069):	8.88	1.278	3.25	32.01
+ ID2= 2 (0073):	3.30	0.411	3.25	32.38
=====				
ID = 3 (0072):	12.18	1.689	3.25	32.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0072)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0072):	12.18	1.689	3.25	32.11
+ ID2= 2 (0074):	1.80	0.275	3.25	31.97
=====				
ID = 1 (0072):	13.98	1.964	3.25	32.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEKS 1,2,4
POST-DEV FLOWS WITHOUT ATTENUATED FLOWS
FROM POND



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905)576-8500 • FAX (905)576-9730
info@dgbiddle.com

SCALE N.T.S.
DRAWN M.H.
DESIGN M.H.
CHECKED F.H.V.
DATE MAY 2022

PROJECT
121133

DWG

FIG 8

=====

V V I SSSS U U A L (v 6.2.2008)

V V I SS U U A A L

V V I SS U U A A A L

V V I SS U U A A L

V V I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM

O O T T H H Y Y M M O O

000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc

Copyright 2007 - 2021 Smart City Water Inc

All rights reserved.

Post-Development Flows
without Attenuated Flows
from Pond

***** 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\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\0336

Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\0336

DATE: 05/31/2022 TIME: 04:02:14

USER:

COMMENTS: _____

** SIMULATION : Cavan 10 Year Storm **

CHICAGO STORM IDF curve parameters: A=1560.000

Ptotal= 53.50 mm B= 13.000

C= 0.860

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

Duration of storm = 4.00 hrs

Storm time step = 10.00 min

Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.91	1.00	33.34	2.00	8.57	3.00	3.62
0.17	3.45	1.17	105.21	2.17	7.00	3.17	3.30
0.33	4.24	1.33	43.73	2.33	5.91	3.33	3.03
0.50	5.50	1.50	22.99	2.50	5.10	3.50	2.80
0.67	7.78	1.67	15.02	2.67	4.49	3.67	2.61
0.83	12.98	1.83	10.97	2.83	4.01	3.83	2.44

CALIB NASHYD (0005) Area (ha)= 100.57 Curve Number (CN)= 65.0

ID= 1 DT= 5.0 min Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 1.75

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 0.919 (i)

TIME TO PEAK (hrs)= 3.583

RUNOFF VOLUME (mm)= 12.696

TOTAL RAINFALL (mm)= 53.500

RUNOFF COEFFICIENT = 0.237

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

CALIB NASHYD (0007) Area (ha)= 5.53 Curve Number (CN)= 65.0

ID= 1 DT= 5.0 min Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.53

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.116 (i)

TIME TO PEAK (hrs)= 2.000

RUNOFF VOLUME (mm)= 12.696

TOTAL RAINFALL (mm)= 53.500

RUNOFF COEFFICIENT = 0.237

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

CALIB NASHYD (0011) Area (ha)= 3.13 Curve Number (CN)= 65.0

ID= 1 DT= 5.0 min Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.16

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.126 (i)

TIME TO PEAK (hrs)= 1.500

RUNOFF VOLUME (mm)= 12.632

TOTAL RAINFALL (mm)= 53.500

RUNOFF COEFFICIENT = 0.236

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

CALIB					
NASHYD	(0012)	Area	(ha)= 26.14	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.80		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.416 (i)
TIME TO PEAK (hrs)= 2.417
RUNOFF VOLUME (mm)= 12.696
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

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

ADD HYD (0013)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):	3.13	0.126	1.50	12.63
+ ID2= 2 (0012):	26.14	0.416	2.42	12.70
ID = 3 (0013):	29.27	0.445	2.33	12.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0013):	29.27	0.445	2.33	12.69
+ ID2= 2 (0007):	5.53	0.116	2.00	12.70
ID = 1 (0013):	34.80	0.551	2.25	12.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0008)		Area	(ha)= 1.17		
ID= 1 DT= 5.0 min		Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.76 0.41
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 88.36 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03

0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.32 (ii) 15.60 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.30 0.07
TOTALS
PEAK FLOW (cms)= 0.22 0.01 0.226 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0010)		Area	(ha)= 0.64		
ID= 1 DT= 5.0 min		Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.41 0.22
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 65.09 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 1.93 (ii) 15.21 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.07
TOTALS
PEAK FLOW (cms)= 0.12 0.01 0.123 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

 (ha) (cms) (hrs) (mm)
ID1= 1 (0010): 0.64 0.123 1.33 39.13
+ ID2= 2 (0013): 34.80 0.551 2.25 12.69
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0009) |
3 + 2 = 1
 (ha) (cms) (hrs) (mm)
ID1= 3 (0009): 35.44 0.563 2.25 13.16
+ ID2= 2 (0008): 1.17 0.226 1.33 39.13
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAA L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\1d84
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\1d84

DATE: 05/31/2022 TIME: 04:02:14

USER:

COMMENTS: _____

** SIMULATION : Cavan 100 Year **

| CHICAGO STORM | IDF curve parameters: A=2507.000
| Ptotal= 76.49 mm | B= 14.800
 C= 0.880
used in: INTENSITY = A / (t + B)^C

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr		hrs	mm/hr	hrs	mm/hr
0.00	3.91	1.00	49.06		2.00	12.26	3.00	4.92
0.17	4.69	1.17	148.61		2.17	9.92	3.17	4.46
0.33	5.83	1.33	64.28		2.33	8.29	3.33	4.08
0.50	7.68	1.50	33.91		2.50	7.10	3.50	3.75
0.67	11.07	1.67	21.97		2.67	6.19	3.67	3.48
0.83	18.89	1.83	15.87		2.83	5.49	3.83	3.24

| CALIB |
| NASHYD (0005) | Area (ha)= 100.57 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

----- U.H. Tp(hrs)= 1.75

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46
0.417 5.83 1.417 64.28 2.417 8.29 3.42 4.08
0.500 5.83 1.500 64.28 2.500 8.29 3.50 4.08
0.583 7.68 1.583 33.91 2.583 7.10 3.58 3.75
0.667 7.68 1.667 33.91 2.667 7.10 3.67 3.75
0.750 11.07 1.750 21.97 2.750 6.19 3.75 3.48
0.833 11.07 1.833 21.97 2.833 6.19 3.83 3.48
0.917 18.89 1.917 15.87 2.917 5.49 3.92 3.24
1.000 18.89 2.000 15.87 3.000 5.49 4.00 3.24

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 1.799 (i)
TIME TO PEAK (hrs)= 3.500
RUNOFF VOLUME (mm)= 24.542
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

| CALIB |
| NASHYD (0007) | Area (ha)= 5.53 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.53

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46
0.417 5.83 1.417 64.28 2.417 8.29 3.42 4.08
0.500 5.83 1.500 64.28 2.500 8.29 3.50 4.08
0.583 7.68 1.583 33.91 2.583 7.10 3.58 3.75
0.667 7.68 1.667 33.91 2.667 7.10 3.67 3.75
0.750 11.07 1.750 21.97 2.750 6.19 3.75 3.48
0.833 11.07 1.833 21.97 2.833 6.19 3.83 3.48
0.917 18.89 1.917 15.87 2.917 5.49 3.92 3.24
1.000 18.89 2.000 15.87 3.000 5.49 4.00 3.24

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.233 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 24.540
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

| CALIB |
| NASHYD (0011) | Area (ha)= 3.13 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46

0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.253 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 24.417
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.319

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

CALIB NASHYD (0012)	Area (ha)= 26.14	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.80	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.830 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 24.541
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

ADD HYD (0013)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):	3.13	0.253	1.50	24.42
+ ID2= 2 (0012):	26.14	0.830	2.33	24.54
=====				
ID = 3 (0013):	29.27	0.883	2.33	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0013):	29.27	0.883	2.33	24.53
+ ID2= 2 (0007):	5.53	0.233	2.00	24.54
=====				
ID = 1 (0013):	34.80	1.094	2.25	24.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0008)	Area (ha)= 1.17	
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.76	0.41
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	88.36	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 2.02 (ii) 6.73 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.31 0.14

PEAK FLOW (cms)= 0.31 0.04 0.346 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 75.49 26.56 58.36
TOTAL RAINFALL (mm)= 76.49 76.49 76.49
RUNOFF COEFFICIENT = 0.99 0.35 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0010)	Area (ha)= 0.64	
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.41	0.22
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	65.09	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 1.69 (ii) 6.39 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32 0.15

PEAK FLOW (cms)= 0.17 0.02 *TOTALS* 0.188 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 75.49 26.56 58.36
TOTAL RAINFALL (mm)= 76.49 76.49 76.49
RUNOFF COEFFICIENT = 0.99 0.35 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0010):	0.64	0.188	1.33	58.36
+ ID2= 2 (0013):	34.80	1.094	2.25	24.53
=====				
ID = 3 (0009):	35.44	1.113	2.17	25.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0009):	35.44	1.113	2.17	25.14
+ ID2= 2 (0008):	1.17	0.346	1.33	58.36
=====				
ID = 1 (0009):	36.61	1.148	2.17	26.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\1dfa
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\1dfa

DATE: 05/31/2022 TIME: 04:02:15

USER:

COMMENTS: _____

** SIMULATION : Cavan 2 Year **

CHICAGO STORM	IDF curve parameters: A= 662.000
Ptotal= 34.03 mm	B= 7.500
	C= 0.790

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.29	1.00	18.79	2.00	5.56	3.00	2.73
0.17	2.63	1.17	69.00	2.17	4.70	3.17	2.53
0.33	3.11	1.33	24.52	2.33	4.09	3.33	2.36
0.50	3.85	1.50	13.09	2.50	3.62	3.50	2.21
0.67	5.12	1.67	8.95	2.67	3.26	3.67	2.09
0.83	7.88	1.83	6.84	2.83	2.97	3.83	1.97

CALIB	Area (ha)= 100.57	Curve Number (CN)= 65.0
NASHYD (0005)	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 1.75	

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 0.356 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB	Area (ha)= 5.53	Curve Number (CN)= 65.0
NASHYD (0007)	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.53	

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.042 (i)
TIME TO PEAK (hrs)= 2.083
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB					
NASHYD	(0011)	Area	(ha)= 3.13	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.16		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.056
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

CALIB					
NASHYD	(0012)	Area	(ha)= 26.14	Curve Number	(CN)= 65.0
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
		U.H. Tp(hrs)=	0.80		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.153 (i)
TIME TO PEAK (hrs)= 2.417
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

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

ADD HYD (0013)					
1 + 2 = 3	AREA	OPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (0011):	3.13	0.046	1.50	5.06	
+ ID2= 2 (0012):	26.14	0.153	2.42	5.08	

ID = 3 (0013): 29.27 0.165 2.42 5.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)					
3 + 2 = 1	AREA	OPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 (0013):	29.27	0.165	2.42	5.08	
+ ID2= 2 (0007):	5.53	0.042	2.08	5.08	
ID = 1 (0013):	34.80	0.203	2.33	5.08	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0008)	Area	(ha)= 1.17			
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00	
	IMPERVIOUS		PERVIOUS (i)		
Surface Area	(ha)= 0.76		0.41		
Dep. Storage	(mm)= 1.00		1.50		
Average Slope	(%)= 1.00		2.00		
Length	(m)= 88.36		40.00		
Mannings n	= 0.013		0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 2.75 (ii) 22.18 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.28 0.05

PEAK FLOW (cms)= 0.14 0.00 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.75 0.144 (iii)
RUNOFF VOLUME (mm)= 33.03 6.25 23.65
TOTAL RAINFALL (mm)= 34.03 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18 0.69

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0010)	Area	(ha)= 0.64			
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00	
	IMPERVIOUS		PERVIOUS (i)		
Surface Area	(ha)= 0.41		0.22		
Dep. Storage	(mm)= 1.00		1.50		
Average Slope	(%)= 1.00		2.00		
Length	(m)= 65.09		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	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00
over (min) 5.00
Storage Coeff. (min)= 2.29 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.30

PEAK FLOW (cms)= 0.08
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 33.03
TOTAL RAINFALL (mm)= 34.03
RUNOFF COEFFICIENT = 0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0010):	0.64	0.079	1.33	23.64
+ ID2= 2 (0013):	34.80	0.203	2.33	5.08
ID = 3 (0009):	35.44	0.210	2.33	5.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0009):	35.44	0.210	2.33	5.41
+ ID2= 2 (0008):	1.17	0.144	1.33	23.65
ID = 1 (0009):	36.61	0.267	1.33	6.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\F459
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\F459

DATE: 05/31/2022

TIME: 04:02:15

USER:

COMMENTS: _____

** SIMULATION : Cavan 25 year **

CHICAGO STORM
Ptotal= 61.50 mm

IDF curve parameters: A=2010.000
B= 14.000
C= 0.880
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.09	1.00	39.20	2.00	9.66	3.00	3.89
0.17	3.70	1.17	122.63	2.17	7.82	3.17	3.53
0.33	4.60	1.33	51.58	2.33	6.53	3.33	3.22
0.50	6.06	1.50	26.88	2.50	5.60	3.50	2.97
0.67	8.73	1.67	17.34	2.67	4.89	3.67	2.75
0.83	14.90	1.83	12.51	2.83	4.33	3.83	2.56

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 100.57
Ia (mm)= 5.00
U.H. Tp(hrs)= 1.75

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 1.208 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 16.516
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

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

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 5.53
Ia (mm)= 5.00
U.H. Tp(hrs)= 0.53

Curve Number (CN)= 65.0
of Linear Res.(N)= 3.00

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

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

0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.156 (i)
 TIME TO PEAK (hrs)= 2.000
 RUNOFF VOLUME (mm)= 16.515
 TOTAL RAINFALL (mm)= 61.498
 RUNOFF COEFFICIENT = 0.269

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

CALIB							
NASHYD (0011)	Area (ha)=	3.13	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.16					

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.171 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 16.432
 TOTAL RAINFALL (mm)= 61.498
 RUNOFF COEFFICIENT = 0.267

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

CALIB							
NASHYD (0012)	Area (ha)=	26.14	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.80					

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.556 (i)
 TIME TO PEAK (hrs)= 2.333
 RUNOFF VOLUME (mm)= 16.516
 TOTAL RAINFALL (mm)= 61.498
 RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0013)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	3.13	0.171	1.50	16.43
+ ID2= 2 (0012):	26.14	0.556	2.33	16.52
ID = 3 (0013):	29.27	0.592	2.33	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	29.27	0.592	2.33	16.51
+ ID2= 2 (0007):	5.53	0.156	2.00	16.52
ID = 1 (0013):	34.80	0.734	2.25	16.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0008)	Area (ha)=	1.17		
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.76	0.41
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	88.36	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63
 over (min)= 5.00
 Storage Coeff. (min)= 2.19 (ii)
 Unit Hyd. Tpeak (min)= 5.00
 Unit Hyd. peak (cms)= 0.31

PEAK FLOW (cms)= 0.26
 TIME TO PEAK (hrs)= 1.33
 RUNOFF VOLUME (mm)= 60.50
 TOTAL RAINFALL (mm)= 61.50
 RUNOFF COEFFICIENT = 0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 65.0 Ia = Dep. 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 (0010) ID= 1 DT= 5.0 min	Area (ha)= 0.64 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
--	--

Surface Area (ha)=	0.41	0.22
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	65.09	40.00
Mannings n =	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)=	122.63	27.14
over (min)	5.00	15.00
Storage Coeff. (min)=	1.82 (ii)	13.71 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

TOTALS

PEAK FLOW (cms)=	0.14	0.01	0.146 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	60.50	18.29	45.72
TOTAL RAINFALL (mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT =	0.98	0.30	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	0.64	0.146	1.33	45.72
+ ID2= 2 (0013):	34.80	0.734	2.25	16.51
ID = 3 (0009):	35.44	0.748	2.17	17.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0009):	35.44	0.748	2.17	17.03
+ ID2= 2 (0008):	1.17	0.267	1.33	45.72
ID = 1 (0009):	36.61	0.778	2.17	17.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L

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

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\23f1
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\23f1

DATE: 05/31/2022 TIME: 04:02:15

USER:

COMMENTS: _____

** SIMULATION : Cavan 5 Year **

CHICAGO STORM Ptotal= 44.88 mm	IDF curve parameters: A=1098.000 B= 10.100 C= 0.830
-----------------------------------	---

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.66	1.00	26.50	2.00	7.15	3.00	3.24
0.17	3.11	1.17	90.98	2.17	5.94	3.17	2.98
0.33	3.75	1.33	34.82	2.33	5.08	3.33	2.76
0.50	4.75	1.50	18.23	2.50	4.44	3.50	2.57
0.67	6.53	1.67	12.10	2.67	3.95	3.67	2.41
0.83	10.53	1.83	9.00	2.83	3.56	3.83	2.26

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 100.57 Ia (mm)= 5.00 U.H. Tp(hrs)= 1.75	Curve Number (CN)= 65.0 # of Linear Res.(N)= 3.00
--	--	--

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 0.643 (i)

TIME TO PEAK (hrs)= 3.667
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB					
NASHYD (0007)	Area (ha)=	5.53	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.53			

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

CALIB					
NASHYD (0011)	Area (ha)=	3.13	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.16			

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 8.958
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.200

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

CALIB					
NASHYD (0012)	Area (ha)=	26.14	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00	

U.H. Tp(hrs)= 0.80

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

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.287 (i)
TIME TO PEAK (hrs)= 2.417
RUNOFF VOLUME (mm)= 9.004
TOTAL RAINFALL (mm)= 44.883
RUNOFF COEFFICIENT = 0.201

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

ADD HYD (0013)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	3.13	0.088	1.50	8.96
+ ID2= 2 (0012):	26.14	0.287	2.42	9.00
=====				
ID = 3 (0013):	29.27	0.307	2.33	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	29.27	0.307	2.33	9.00
+ ID2= 2 (0007):	5.53	0.080	2.00	9.00
=====				
ID = 1 (0013):	34.80	0.380	2.25	9.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0008)	Area Total	(ha)= 1.17	Imp(%)= 65.00	Dir. Conn.(%)= 65.00	
ID= 1 DT= 5.0 min					

Surface Area	(ha)=	0.76	IMPERVIOUS	PERVIOUS (i)
Dep. Storage	(mm)=	1.00		0.41
Average Slope	(%)=	1.00		1.50
Length	(m)=	88.36		2.00
Mannings n	=	0.013		40.00
				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	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41

0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98 over (min)= 5.00
Storage Coeff. (min)= 2.46 (ii) 17.98 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.30 0.06

PEAK FLOW (cms)= 0.19 0.01
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 43.88 10.45
TOTAL RAINFALL (mm)= 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23

TOTALS
0.193 (iii)
0.133

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0010) ID= 1 DT= 5.0 min	Area (ha)= 0.64 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
--	--

Surface Area (ha)= 0.41 Dep. Storage (mm)= 1.00 Average Slope (%)= 1.00 Length (m)= 65.09 Mannings n = 0.013	IMPERVIOUS 0.22 PERVIOUS (i) 1.50 2.00 40.00 0.250
--	--

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98 over (min)= 5.00
Storage Coeff. (min)= 2.05 (ii) 17.57 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.31 0.06

PEAK FLOW (cms)= 0.10 0.01
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 43.88 10.45
TOTAL RAINFALL (mm)= 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23

TOTALS
0.106 (iii)
1.33

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009) 1 + 2 = 3	AREA (ha)= 0.64 OPEAK (cms)= 0.106 TPEAK (hrs)= 1.33 R.V. (mm)= 32.16
------------------------------	--

ID1= 1 (0010): 0.64 0.106 1.33 32.16
+ ID2= 2 (0013): 34.80 0.380 2.25 9.00

ID = 3 (0009): 35.44 0.389 2.25 9.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009) 3 + 2 = 1	AREA (ha)= 35.44 OPEAK (cms)= 0.389 TPEAK (hrs)= 2.25 R.V. (mm)= 9.42
------------------------------	--

ID1= 3 (0009): 35.44 0.389 2.25 9.42
+ ID2= 2 (0008): 1.17 0.193 1.33 32.17

ID = 1 (0009): 36.61 0.409 2.17 10.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\0582
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\0582

DATE: 05/31/2022

TIME: 04:02:14

USER:

COMMENTS: _____

** SIMULATION : Cavan 50 Year **

CHICAGO STORM Ptotal= 71.00 mm	IDF curve parameters: A=2200.000 B= 14.600 C= 0.870 used in: INTENSITY = A / (t + B)^C Duration of storm = 4.00 hrs Storm time step = 10.00 min Time to peak ratio = 0.33
-----------------------------------	---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.80	1.00	45.14	2.00	11.57	3.00	4.75
0.17	4.53	1.17	135.62	2.17	9.41	3.17	4.32
0.33	5.61	1.33	58.97	2.33	7.90	3.33	3.96
0.50	7.33	1.50	31.37	2.50	6.79	3.50	3.65
0.67	10.47	1.67	20.48	2.67	5.95	3.67	3.39
0.83	17.66	1.83	14.89	2.83	5.28	3.83	3.16

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 100.57 Ia (mm)= 5.00 U.H. Tp(hrs)= 1.75	Curve Number (CN)= 65.0 # 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 1.565 (i)
 TIME TO PEAK (hrs)= 3.583
 RUNOFF VOLUME (mm)= 21.481
 TOTAL RAINFALL (mm)= 70.997
 RUNOFF COEFFICIENT = 0.303

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

CALIB NASHYD (0007) ID= 1 DT= 5.0 min	Area (ha)= 5.53 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.53	Curve Number (CN)= 65.0 # 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.200 (i)
 TIME TO PEAK (hrs)= 2.000
 RUNOFF VOLUME (mm)= 21.480
 TOTAL RAINFALL (mm)= 70.997
 RUNOFF COEFFICIENT = 0.303

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

CALIB NASHYD (0011) ID= 1 DT= 5.0 min	Area (ha)= 3.13 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.16	Curve Number (CN)= 65.0 # 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65

0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.216 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 21.371
 TOTAL RAINFALL (mm)= 70.997
 RUNOFF COEFFICIENT = 0.301

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

CALIB NASHYD (0012) ID= 1 DT= 5.0 min	Area (ha)= 26.14 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.80	Curve Number (CN)= 65.0 # 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 0.716 (i)
 TIME TO PEAK (hrs)= 2.333
 RUNOFF VOLUME (mm)= 21.480
 TOTAL RAINFALL (mm)= 70.997
 RUNOFF COEFFICIENT = 0.303

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

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	3.13	0.216	1.50	21.37
+ ID2= 2 (0012):	26.14	0.716	2.33	21.48
ID = 3 (0013):	29.27	0.764	2.33	21.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	29.27	0.764	2.33	21.47
+ ID2= 2 (0007):	5.53	0.200	2.00	21.48
ID = 1 (0013):	34.80	0.945	2.25	21.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 1.17 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.76 0.41
 Dep. Storage (mm)= 1.00 1.50

Average Slope (%)= 1.00 2.00
Length (m)= 88.36 40.00
Mannings n = 0.013 0.250

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75				
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75				
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32				
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32				
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96				
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96				
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65				
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65				
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39				
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39				
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16				
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16				

Max.Eff.Inten.(mm/hr)= 135.62 *****
over (min)= 5.00 10.00
Storage Coeff. (min)= 2.10 (ii) 6.98 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.31 0.14

PEAK FLOW (cms)= 0.29 0.03 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.42 0.313 (iii)
RUNOFF VOLUME (mm)= 70.00 23.42 53.69
TOTAL RAINFALL (mm)= 71.00 71.00 71.00
RUNOFF COEFFICIENT = 0.99 0.33 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	0.64
STANDHYD (0010)	Total Imp(%)=	65.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.41	0.22
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	65.09	40.00
Mannings n =	0.013	0.250

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75				
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75				
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32				
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32				
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96				
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96				
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65				
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65				
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39				
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39				
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16				
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16				

Max.Eff.Inten.(mm/hr)= 135.62 *****
over (min)= 5.00 10.00
Storage Coeff. (min)= 1.75 (ii) 6.63 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.14

PEAK FLOW (cms)= 0.16 0.02 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.42 0.171 (iii)
RUNOFF VOLUME (mm)= 70.00 23.42 53.68

TOTAL RAINFALL (mm)= 71.00 71.00 71.00
RUNOFF COEFFICIENT = 0.99 0.33 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0010):	0.64	0.171	1.33	53.68
+ ID2= 2 (0013):	34.80	0.945	2.25	21.47
ID = 3 (0009):	35.44	0.961	2.17	22.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0009):	35.44	0.961	2.17	22.05
+ ID2= 2 (0008):	1.17	0.313	1.33	53.69
ID = 1 (0009):	36.61	0.994	2.17	23.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

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

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\4b7c
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\4b7c

DATE: 05/31/2022

TIME: 04:02:15

USER:

COMMENTS: _____

** SIMULATION : PETERBOROUGH 100 YEAR **

READ STORM	Filename:
	C:\Users\matthew.holmes\AppData\Local\Temp\3073ac5e-8075-46d7-960f-b547c307c1fa\6dc24be0
Ptotal= 89.93 mm	Comments: PETERBOROUGH-SCS-6HR-100YR

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

0.00	0.00	1.75	9.00	3.50	19.80	5.25	3.60
0.25	3.60	2.00	9.00	3.75	9.00	5.50	3.60
0.50	3.60	2.25	10.80	4.00	9.00	5.75	3.60
0.75	5.40	2.50	10.80	4.25	7.20	6.00	3.60
1.00	5.40	2.75	53.90	4.50	7.20		
1.25	5.40	3.00	140.20	4.75	5.40		
1.50	5.40	3.25	19.80	5.00	5.40		

CALIB							
NASHYD	(0005)	Area	(ha)= 100.57	Curve Number	(CN)= 65.0		
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00			
		U.H. Tp(hrs)=	1.75				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 2.198

PEAK FLOW (cms)= 2.298 (i)
TIME TO PEAK (hrs)= 5.250
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB							
NASHYD	(0007)	Area	(ha)= 5.53	Curve Number	(CN)= 65.0		
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00			
		U.H. Tp(hrs)=	0.53				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.399

PEAK FLOW (cms)= 0.309 (i)
TIME TO PEAK (hrs)= 3.750
RUNOFF VOLUME (mm)= 32.531
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.362

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

CALIB							
NASHYD	(0011)	Area	(ha)= 3.13	Curve Number	(CN)= 65.0		
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00			
		U.H. Tp(hrs)=	0.16				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.771

PEAK FLOW (cms)= 0.395 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 32.367
TOTAL RAINFALL (mm)= 89.925
RUNOFF COEFFICIENT = 0.360

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

CALIB							
NASHYD	(0012)	Area	(ha)= 26.14	Curve Number	(CN)= 65.0		
ID= 1 DT= 5.0 min		Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00			
		U.H. Tp(hrs)=	0.80				

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60

1.500 5.40 | 3.083 140.20 | 4.667 7.20 | 6.25 3.60
1.583 5.40 | 3.167 140.20 | 4.750 7.20

Unit Hyd Qpeak (cms)= 1.243

PEAK FLOW (cms)= 1.082 (i)
TIME TO PEAK (hrs)= 4.000
RUNOFF VOLUME (mm)= 32.532
TOTAL RAINFALL (mm)= 89.93
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0013)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	3.13	0.395	3.25	32.37
+ ID2= 2 (0012):	26.14	1.082	4.00	32.53
=====				
ID = 3 (0013):	29.27	1.142	4.00	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	29.27	1.142	4.00	32.51
+ ID2= 2 (0007):	5.53	0.309	3.75	32.53
=====				
ID = 1 (0013):	34.80	1.427	3.92	32.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min				Area Total	(ha)= Imp(%)=	1.17 65.00	Dir. Conn.(%)=	65.00
				IMPERVIOUS		PERVIOUS (i)		
Surface Area				(ha)=	0.76	0.41		
Dep. Storage				(mm)=	1.00	1.50		
Average Slope				(%)=	1.00	2.00		
Length				(m)=	88.36	40.00		
Mannings n				=	0.013	0.250		

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

TRANSFORMED HYETOGRAPH							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)= 140.20
over (min)= 5.00
Storage Coeff. (min)= 2.07 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.31

TOTALS
0.356 (iii)
3.25

PEAK FLOW (cms)= 0.30
TIME TO PEAK (hrs)= 3.25

RUNOFF VOLUME (mm)= 88.92 34.72 69.95
TOTAL RAINFALL (mm)= 89.93 89.93 89.93
RUNOFF COEFFICIENT = 0.99 0.39 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0010) ID= 1 DT= 5.0 min				Area Total	(ha)= Imp(%)=	0.64 65.00	Dir. Conn.(%)=	65.00
				IMPERVIOUS		PERVIOUS (i)		
Surface Area				(ha)=	0.41	0.22		
Dep. Storage				(mm)=	1.00	1.50		
Average Slope				(%)=	1.00	2.00		
Length				(m)=	65.09	40.00		
Mannings n				=	0.013	0.250		

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

TRANSFORMED HYETOGRAPH							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)= 140.20
over (min)= 5.00
Storage Coeff. (min)= 1.72 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32

TOTALS
0.194 (iii)
3.25
69.95
89.93
0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	0.64	0.194	3.25	69.95
+ ID2= 2 (0013):	34.80	1.427	3.92	32.52
=====				
ID = 3 (0009):	35.44	1.443	3.92	33.19

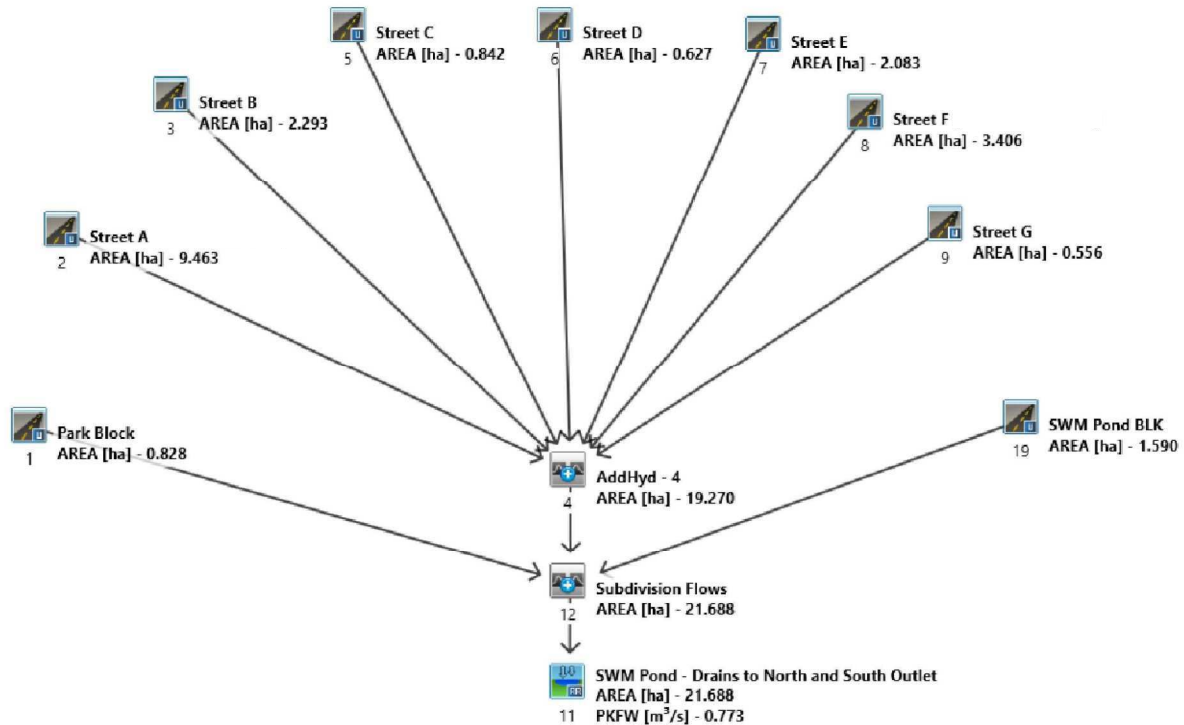
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0009) |
3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0009):	35.44	1.443	3.92	33.19
+ ID2= 2 (0008):	1.17	0.356	3.25	69.95
=====				
ID = 1 (0009):	36.61	1.479	3.75	34.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH



1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEKS 1,2,4 POST-DEV ATTENUATED FLOWS FROM SUBDIVISION



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905)576-8500 • FAX (905)576-9730
info@dgbiddle.com

SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
M.H.
M.H.
F.H.V.
MAY 2022

PROJECT
121133

DWG

FIG 9



13

Creek 5 - Post Dev Flows
AREA [ha] - 7.354



14

Creek 6 Runoff to Culvert Uncontrolled
AREA [ha] - 9.620



15

East Triangle Development
AREA [ha] - 3.845



16

Dry SWM Pond
AREA [ha] - 3.845



17

Creek 6 - Post Dev Flows
AREA [ha] - 13.465
PKFW [m³/s] - 0.783

1683 MOORE DRIVE & 1490 COUNTRY ROAD 28

VISUAL OTTHYMO SCHEMATIC – CREEKS 5, 6 POST-DEVELOPMENT SUBDIVISION FLOWS



D.G. Biddle & Associates Limited

consulting engineers and planners

96 KING STREET EAST • OSHAWA, ON • L1H 1B6
PHONE (905) 576-8500 • FAX (905) 576-9730
info@dgbiddle.com

SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
M.H.
M.H.
F.H.V.
MAY 2022

PROJECT
121133

DWG

FIG 10

=====

V V I SSSS U U A L (v 6.2.2008)

V V I SS U U A A L

V V I SS U U A A A L

V V I SS U U A A L

V V I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM

O O T T H H Y Y M M O O

000 T T H H Y Y M M O O

Developed and Distributed by Smart City Water Inc

Copyright 2007 - 2021 Smart City Water Inc

All rights reserved.

Post-Development
Attenuated Flows from
Subdivision

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

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

Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\de97

Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\de97

DATE: 05/31/2022 TIME: 03:59:33

USER:

COMMENTS: _____

** SIMULATION : 25mm Storm **

READ STORM		Filename: C:\Users\matthew.holmes\AppData\Local\Temp\667c12bc-509d-4f8c-a983-54b7004b9d9c\f00e1c0525MM4HR					
Ptotal= 25.00 mm		Comments: 25MM4HR					
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.07	1.00	5.70	2.00	5.19	3.00	2.80
0.17	2.27	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

CALIB STANDHYD (0002) ID= 1 DT= 5.0 min	Area (ha)= 9.46 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
Surface Area (ha)= 6.15	IMPERVIOUS 3.31
Dep. Storage (mm)= 1.00	PERVIOUS (i) 1.50
Average Slope (%)= 1.00	2.00
Length (m)= 251.17	40.00
Mannings n = 0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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	3.15					
over (min)	5.00	35.00					
Storage Coeff. (min)=	5.85	33.98	(ii)				
Unit Hyd. Tpeak (min)=	5.00	35.00					
Unit Hyd. peak (cms)=	0.20	0.03					
PEAK FLOW (cms)=	0.73	0.02					
TIME TO PEAK (hrs)=	1.50	2.08					
RUNOFF VOLUME (mm)=	24.00	3.44					
TOTAL RAINFALL (mm)=	25.00	25.00					
RUNOFF COEFFICIENT =	0.96	0.14					

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0003) ID= 1 DT= 5.0 min	Area (ha)= 2.29 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
Surface Area (ha)= 1.49	IMPERVIOUS 0.80
Dep. Storage (mm)= 1.00	PERVIOUS (i) 1.50
Average Slope (%)= 1.00	2.00
Length (m)= 123.65	40.00
Mannings n = 0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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	3.15					
over (min)	5.00	35.00					
Storage Coeff. (min)=	3.82	31.96	(ii)				
Unit Hyd. Tpeak (min)=	5.00	35.00					
Unit Hyd. peak (cms)=	0.25	0.03					
PEAK FLOW (cms)=	0.20	0.00					
TIME TO PEAK (hrs)=	1.50	2.00					
RUNOFF VOLUME (mm)=	24.00	3.44					
TOTAL RAINFALL (mm)=	25.00	25.00					
RUNOFF COEFFICIENT =	0.96	0.14					

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 0.84 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
Surface Area (ha)= 0.55	IMPERVIOUS 0.29
Dep. Storage (mm)= 1.00	PERVIOUS (i) 1.50

Average Slope (%)= 1.00 2.00
Length (m)= 74.92 40.00
Mannings n = 0.013 0.250

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

----- 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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min)= 5.00 35.00
Storage Coeff. (min)= 2.83 (ii) 30.96 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.28 0.04

PEAK FLOW (cms)= 0.07 0.00 *TOTALS*
TIME TO PEAK (hrs)= 1.50 2.00 0.075 (iii)
RUNOFF VOLUME (mm)= 24.00 3.44 16.78
TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0006)	0.63	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0006)	0.63	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min)= 5.00 35.00
Storage Coeff. (min)= 2.59 (ii) 30.73 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.29 0.04

PEAK FLOW (cms)= 0.06 0.00 *TOTALS*
TIME TO PEAK (hrs)= 1.50 2.00 0.056 (iii)
RUNOFF VOLUME (mm)= 24.00 3.44 16.78

TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0007)	2.08	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0007)	2.08	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min)= 5.00 35.00
Storage Coeff. (min)= 3.71 (ii) 31.85 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.25 0.03

PEAK FLOW (cms)= 0.18 0.00 *TOTALS*
TIME TO PEAK (hrs)= 1.50 2.00 0.179 (iii)
RUNOFF VOLUME (mm)= 24.00 3.44 16.80
TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0008)	3.41	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

----- TRANSFORMED HYETOGRAPH -----			
CALIB	Area (ha)=	Dir. Conn.(%)=	
STANDHYD (0008)	3.41	65.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min) 5.00 35.00
Storage Coeff. (min)= 4.30 (ii) 32.44 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.23 0.03

TOTALS
PEAK FLOW (cms)= 0.28 0.01 0.286 (iii)
TIME TO PEAK (hrs)= 1.50 2.08 1.50
RUNOFF VOLUME (mm)= 24.00 3.44 16.80
TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.07	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min) 5.00 35.00
Storage Coeff. (min)= 2.50 (ii) 30.63 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.29 0.04

TOTALS
PEAK FLOW (cms)= 0.05 0.00 0.050 (iii)
TIME TO PEAK (hrs)= 1.50 2.00 1.50
RUNOFF VOLUME (mm)= 24.00 3.44 16.77
TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00
Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.07	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 3.15
over (min) 5.00 35.00
Storage Coeff. (min)= 2.82 (ii) 30.95 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.28 0.04

TOTALS
PEAK FLOW (cms)= 0.02 0.00 0.023 (iii)
TIME TO PEAK (hrs)= 1.50 2.00 1.50
RUNOFF VOLUME (mm)= 24.00 3.44 7.53
TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.14 0.30

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (0001): 0.83 0.023 1.50 7.53
+ ID2= 2 (0002): 9.46 0.736 1.50 16.80
=====

ID = 3 (0004): 10.29 0.759 1.50 16.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0004): 10.29 0.759 1.50 16.06
+ ID2= 2 (0003): 2.29 0.197 1.50 16.79
=====

ID = 1 (0004): 12.58 0.956 1.50 16.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (0004): 12.58 0.956 1.50 16.19

+ ID2= 2 (0005): 0.84 0.075 1.50 16.78
ID = 3 (0004): 13.43 1.030 1.50 16.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	13.43	1.030	1.50	16.23
+ ID2= 2 (0006):	0.63	0.056	1.50	16.78
ID = 1 (0004):	14.05	1.087	1.50	16.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	14.05	1.087	1.50	16.25
+ ID2= 2 (0007):	2.08	0.179	1.50	16.80
ID = 3 (0004):	16.14	1.266	1.50	16.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	16.14	1.266	1.50	16.32
+ ID2= 2 (0008):	3.41	0.286	1.50	16.80
ID = 1 (0004):	19.54	1.552	1.50	16.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	19.54	1.552	1.50	16.41
+ ID2= 2 (0009):	0.56	0.050	1.50	16.77
ID = 3 (0004):	20.10	1.601	1.50	16.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0019)
ID= 1 DT= 5.0 min

Area (ha)=	1.59
Total Imp(%)=	65.00
Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.03	0.56
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	102.95	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
0.083	2.07	1.083	5.70	2.083	5.19
0.167	2.07	1.167	5.70	2.167	5.19
0.250	2.27	1.250	10.78	2.250	4.47
0.333	2.27	1.333	10.78	2.333	4.47
0.417	2.52	1.417	50.21	2.417	3.95
0.500	2.52	1.500	50.21	2.500	3.95
0.583	2.88	1.583	13.37	2.583	3.56
0.667	2.88	1.667	13.37	2.667	3.56
0.750	3.38	1.750	8.29	2.750	3.25
0.833	3.38	1.833	8.29	2.833	3.25
0.917	4.18	1.917	6.30	2.917	3.01
1.000	4.18	2.000	6.30	3.000	3.01

Max.Eff.Inten.(mm/hr)=	50.21	3.15
over (min)	5.00	35.00
Storage Coeff. (min)=	3.42 (ii)	31.56 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.26	0.03
PEAK FLOW (cms)=	0.14	0.00
TIME TO PEAK (hrs)=	1.50	2.00
RUNOFF VOLUME (mm)=	24.00	3.44
TOTAL RAINFALL (mm)=	25.00	25.00
RUNOFF COEFFICIENT =	0.96	0.14

TOTALS
0.138 (iii)
1.50
16.79
25.00
0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	1.59	0.138	1.50	16.79
+ ID2= 2 (0004):	20.10	1.601	1.50	16.42
ID = 3 (0012):	21.69	1.740	1.50	16.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)
IN= 2---> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7662	0.9802
0.0547	0.1537	0.8763	1.2181
0.1004	0.3323	0.9740	1.4667
0.4710	0.5374	1.0626	1.7264
0.4710	0.5374	1.1285	1.9424
0.6367	0.7532	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0012)	21.688	1.740	1.50	16.44
OUTFLOW: ID= 1 (0011)	21.688	0.086	4.00	16.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.94
TIME SHIFT OF PEAK FLOW (min)=150.00
MAXIMUM STORAGE USED (ha.m.)= 0.2758

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)=	7.35	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.18		

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

---- 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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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)= 1.585

PEAK FLOW (cms)= 0.042 (i)

TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 2.543
TOTAL RAINFALL (mm)= 24.997
RUNOFF COEFFICIENT = 0.102

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

CALIB							
NASHYD (0014)	Area (ha)=	9.62	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.38					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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)= 0.957

PEAK FLOW (cms)= 0.037 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 2.550
TOTAL RAINFALL (mm)= 24.997
RUNOFF COEFFICIENT = 0.102

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

CALIB							
STANDHYD (0015)	Area (ha)=	3.85					
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.50	1.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	160.10	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	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	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	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 9.88
over (min)= 5.00 25.00
Storage Coeff. (min)= 4.46 (ii) 22.28 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.23 0.05

		TOTALS
PEAK FLOW (cms)=	0.32	0.325 (iii)
TIME TO PEAK (hrs)=	1.50	1.50
RUNOFF VOLUME (mm)=	24.00	18.42

TOTAL RAINFALL (mm)= 25.00 25.00 25.00
RUNOFF COEFFICIENT = 0.96 0.32 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. 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(0016)	OVERFLOW IS OFF				
IN= 2--> OUT= 1	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
DT= 5.0 min	0.0000	0.0000	0.1302	0.1016	
	0.0663	0.0485	0.1858	0.1828	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)		3.845	0.325	1.50	18.42
OUTFLOW: ID= 1 (0016)		3.845	0.050	2.25	18.38
		PEAK FLOW REDUCTION [Qout/Qin](%)=	15.24		
		TIME SHIFT OF PEAK FLOW (min)=	45.00		
		MAXIMUM STORAGE USED (ha.m.)=	0.0362		

ADD HYD (0017)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0014):	9.62	0.037	2.00	2.55
+ ID2= 2 (0016):	3.85	0.050	2.25	18.38
ID = 3 (0017):	13.47	0.086	2.08	7.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

=====

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

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\vo1n.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\06a5.
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\06a5.

DATE: 05/31/2022

TIME: 03:59:31

USER:

COMMENTS: _____

** SIMULATION : Cavan 100 Year **

CHICAGO STORM
Ptotal= 76.49 mm

IDF curve parameters: A=2507.000
B= 14.800
C= 0.880
used in: INTENSITY = A / (t + B)[^]C

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.91	1.00	49.06	2.00	12.26	3.00	4.92
0.17	4.69	1.17	148.61	2.17	9.92	3.17	4.46
0.33	5.83	1.33	64.28	2.33	8.29	3.33	4.08
0.50	7.68	1.50	33.91	2.50	7.10	3.50	3.75
0.67	11.07	1.67	21.97	2.67	6.19	3.67	3.48
0.83	18.89	1.83	15.87	2.83	5.49	3.83	3.24

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 9.46
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 6.15 3.31
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 251.17 40.00
Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 3.79 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.25

PEAK FLOW (cms)= 2.41
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 75.49
TOTAL RAINFALL (mm)= 76.49
RUNOFF COEFFICIENT = 0.99

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.29
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.49 0.80
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 123.65 40.00

Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 2.48 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.29

PEAK FLOW (cms)= 0.61
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 75.49
TOTAL RAINFALL (mm)= 76.49
RUNOFF COEFFICIENT = 0.99

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 0.84
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.55 0.29
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.92 40.00
Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 1.83 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32

PEAK FLOW (cms)= 0.23
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 75.49
TOTAL RAINFALL (mm)= 76.49
RUNOFF COEFFICIENT = 0.99

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0006)	Area (ha)=	0.63	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.41	0.22
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	64.67	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)=	148.61	*****	
over (min)=	5.00		
Storage Coeff. (min)=	1.68 (ii)	6.38 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.15	
PEAK FLOW (cms)=	0.17	0.02	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.42	0.186 (iii)
RUNOFF VOLUME (mm)=	75.49	26.56	58.36
TOTAL RAINFALL (mm)=	76.49	76.49	76.49
RUNOFF COEFFICIENT =	0.99	0.35	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0007)	Area (ha)=	2.08	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.35	0.73
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	117.83	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46

0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)=	148.61	*****	
over (min)=	5.00	10.00	
Storage Coeff. (min)=	2.41 (ii)	7.11 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.14	
PEAK FLOW (cms)=	0.55	0.07	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.42	0.610 (iii)
RUNOFF VOLUME (mm)=	75.49	26.56	58.36
TOTAL RAINFALL (mm)=	76.49	76.49	76.49
RUNOFF COEFFICIENT =	0.99	0.35	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0008)	Area (ha)=	3.41	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.21	1.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	150.68	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)=	148.61	*****	
over (min)=	5.00	10.00	
Storage Coeff. (min)=	2.79 (ii)	7.49 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.13	
PEAK FLOW (cms)=	0.90	0.12	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.42	0.988 (iii)
RUNOFF VOLUME (mm)=	75.49	26.56	58.36
TOTAL RAINFALL (mm)=	76.49	76.49	76.49
RUNOFF COEFFICIENT =	0.99	0.35	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009) | Area (ha)= 0.56
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46
0.417 5.83 1.417 64.28 2.417 8.29 3.42 4.08
0.500 5.83 1.500 64.28 2.500 8.29 3.50 4.08
0.583 7.68 1.583 33.91 2.583 7.10 3.58 3.75
0.667 7.68 1.667 33.91 2.667 7.10 3.67 3.75
0.750 11.07 1.750 21.97 2.750 6.19 3.75 3.48
0.833 11.07 1.833 21.97 2.833 6.19 3.83 3.48
0.917 18.89 1.917 15.87 2.917 5.49 3.92 3.24
1.000 18.89 2.000 15.87 3.000 5.49 4.00 3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min) 5.00 10.00
Storage Coeff. (min)= 1.62 (ii) 6.32 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.15

PEAK FLOW (cms)= 0.15 0.02 0.165 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 75.49 26.56 58.36
TOTAL RAINFALL (mm)= 76.49 76.49 76.49
RUNOFF COEFFICIENT = 0.99 0.35 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0001) | Area (ha)= 0.83
ID= 1 DT= 5.0 min | Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46
0.417 5.83 1.417 64.28 2.417 8.29 3.42 4.08
0.500 5.83 1.500 64.28 2.500 8.29 3.50 4.08
0.583 7.68 1.583 33.91 2.583 7.10 3.58 3.75
0.667 7.68 1.667 33.91 2.667 7.10 3.67 3.75
0.750 11.07 1.750 21.97 2.750 6.19 3.75 3.48
0.833 11.07 1.833 21.97 2.833 6.19 3.83 3.48
0.917 18.89 1.917 15.87 2.917 5.49 3.92 3.24
1.000 18.89 2.000 15.87 3.000 5.49 4.00 3.24

Max.Eff.Inten.(mm/hr)= 148.61 45.31
over (min) 5.00 15.00
Storage Coeff. (min)= 1.82 (ii) 11.51 (ii)

Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.32 0.09
PEAK FLOW (cms)= 0.07 0.05 0.095 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 75.49 26.56 36.34
TOTAL RAINFALL (mm)= 76.49 76.49 76.49
RUNOFF COEFFICIENT = 0.99 0.35 0.48

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (0001): 0.83 0.095 1.33 36.34
+ ID2= 2 (0002): 9.46 2.653 1.33 58.36
ID = 3 (0004): 10.29 2.748 1.33 56.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004) |
3 + 2 = 1 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0004): 10.29 2.748 1.33 56.59
+ ID2= 2 (0003): 2.29 0.671 1.33 58.36
ID = 1 (0004): 12.58 3.418 1.33 56.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004) |
1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (0004): 12.58 3.418 1.33 56.91
+ ID2= 2 (0005): 0.84 0.249 1.33 58.36
ID = 3 (0004): 13.43 3.668 1.33 57.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004) |
3 + 2 = 1 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0004): 13.43 3.668 1.33 57.00
+ ID2= 2 (0006): 0.63 0.186 1.33 58.36
ID = 1 (0004): 14.05 3.854 1.33 57.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004) |
1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (0004): 14.05 3.854 1.33 57.07
+ ID2= 2 (0007): 2.08 0.610 1.33 58.36
ID = 3 (0004): 16.14 4.464 1.33 57.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004) |
3 + 2 = 1 | AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0004):	16.14	4.464	1.33	57.23
+ ID2= 2 (0008):	3.41	0.988	1.33	58.36
ID = 1 (0004):	19.54	5.452	1.33	57.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0004):	19.54	5.452	1.33	57.43
+ ID2= 2 (0009):	0.56	0.165	1.33	58.36
ID = 3 (0004):	20.10	5.617	1.33	57.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0019)	Area	(ha)=	1.59	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	1.03	0.56	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	102.95	40.00	
Mannings n	=	0.013	0.250	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Max.Eff.Inten.(mm/hr)=	148.61	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.22 (ii)	6.92 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.14	

PEAK FLOW	(cms)=	0.42	0.06	*TOTALS*
TIME TO PEAK	(hrs)=	1.33	1.42	0.468 (iii)
RUNOFF VOLUME	(mm)=	75.49	26.56	58.36
TOTAL RAINFALL	(mm)=	76.49	76.49	76.49
RUNOFF COEFFICIENT	=	0.99	0.35	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):	1.59	0.468	1.33	58.36
+ ID2= 2 (0004):	20.10	5.617	1.33	57.46
ID = 3 (0012):	21.69	6.084	1.33	57.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.7662	0.9802
	0.0547	0.1537	0.8763	1.2181
	0.1004	0.3323	0.9740	1.4667
	0.4710	0.5374	1.0626	1.7264
	0.4710	0.5374	1.1285	1.9424
	0.6367	0.7532	0.0000	0.0000
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0012)	21.688	6.084	1.33	57.52
OUTFLOW: ID= 1 (0011)	21.688	0.686	2.08	57.49
	PEAK FLOW	REDUCTION [Qout/Qin](%)=	11.28	
	TIME SHIFT OF PEAK FLOW	(min)=	45.00	
	MAXIMUM STORAGE USED	(ha.m.)=	0.8404	

CALIB				
NASHYD (0013)	Area	(ha)=	7.35	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.18		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW	(cms)=	0.567 (i)
TIME TO PEAK	(hrs)=	1.500
RUNOFF VOLUME	(mm)=	24.467
TOTAL RAINFALL	(mm)=	76.492
RUNOFF COEFFICIENT	=	0.320

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

CALIB				
NASHYD (0014)	Area	(ha)=	9.62	Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38		

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.91	1.083	49.06	2.083	12.26	3.08	4.92
0.167	3.91	1.167	49.06	2.167	12.26	3.17	4.92
0.250	4.69	1.250	148.61	2.250	9.92	3.25	4.46
0.333	4.69	1.333	148.61	2.333	9.92	3.33	4.46
0.417	5.83	1.417	64.28	2.417	8.29	3.42	4.08
0.500	5.83	1.500	64.28	2.500	8.29	3.50	4.08
0.583	7.68	1.583	33.91	2.583	7.10	3.58	3.75
0.667	7.68	1.667	33.91	2.667	7.10	3.67	3.75
0.750	11.07	1.750	21.97	2.750	6.19	3.75	3.48
0.833	11.07	1.833	21.97	2.833	6.19	3.83	3.48
0.917	18.89	1.917	15.87	2.917	5.49	3.92	3.24
1.000	18.89	2.000	15.87	3.000	5.49	4.00	3.24

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.493 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 24.538
TOTAL RAINFALL (mm)= 76.492
RUNOFF COEFFICIENT = 0.321

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

CALIB
STANDHYD (0015)
ID= 1 DT= 5.0 min

Area (ha)= 3.85
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.50 1.35
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 160.10 40.00
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.91 1.083 49.06 2.083 12.26 3.08 4.92
0.167 3.91 1.167 49.06 2.167 12.26 3.17 4.92
0.250 4.69 1.250 148.61 2.250 9.92 3.25 4.46
0.333 4.69 1.333 148.61 2.333 9.92 3.33 4.46
0.417 5.83 1.417 64.28 2.417 8.29 3.42 4.08
0.500 5.83 1.500 64.28 2.500 8.29 3.50 4.08
0.583 7.68 1.583 33.91 2.583 7.10 3.58 3.75
0.667 7.68 1.667 33.91 2.667 7.10 3.67 3.75
0.750 11.07 1.750 21.97 2.750 6.19 3.75 3.48
0.833 11.07 1.833 21.97 2.833 6.19 3.83 3.48
0.917 18.89 1.917 15.87 2.917 5.49 3.92 3.24
1.000 18.89 2.000 15.87 3.000 5.49 4.00 3.24

Max.Eff.Inten.(mm/hr)= 148.61
over (min)= 5.00
Storage Coeff. (min)= 2.89 (ii) 7.59 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.13

TOTALS
PEAK FLOW (cms)= 1.01 0.25
TIME TO PEAK (hrs)= 1.33 1.221 (iii)
RUNOFF VOLUME (mm)= 75.49 46.94
TOTAL RAINFALL (mm)= 76.49 76.49
RUNOFF COEFFICIENT = 0.99 0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. 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(0016)
IN= 2--> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

INFLOW : ID= 2 (0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0016)	3.845	1.221	1.33	65.50
	3.845	0.168	2.00	65.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.73
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 0.1564

ADD HYD (0017)
1 + 2 = 3

AREA QPEAK TPEAK R.V.

ID1= 1 (0014): (ha) (cms) (hrs) (mm)
+ ID2= 2 (0016): 9.62 0.493 1.83 24.54
3.85 0.168 2.00 65.45
ID = 3 (0017): 13.47 0.659 1.83 36.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\22db
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\22db

DATE: 05/31/2022

TIME: 03:59:32

USER:

COMMENTS:

** SIMULATION : Cavan 2 Year **

CHICAGO STORM ID curve parameters: A= 662.000
Ptotal= 34.03 mm B= 7.500
C= 0.790

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.29	1.00	18.79	2.00	5.56	3.00	2.73
0.17	2.63	1.17	69.00	2.17	4.70	3.17	2.53
0.33	3.11	1.33	24.52	2.33	4.09	3.33	2.36
0.50	3.85	1.50	13.09	2.50	3.62	3.50	2.21
0.67	3.12	1.67	8.95	2.67	3.26	3.67	2.09
0.83	7.88	1.83	6.84	2.83	2.97	3.83	1.97

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 9.46
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 6.15 3.31
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 251.17 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	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00
over (min) 5.00
Storage Coeff. (min)= 5.15 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.21

PEAK FLOW (cms)= 1.05
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 33.03
TOTAL RAINFALL (mm)= 34.03
RUNOFF COEFFICIENT = 0.97

TOTALS
1.061 (iii)
1.33
23.65
34.03
0.70

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.29
Total Imp(%)= 65.00
Dir. Conn.(%)= 65.00

IMPERVIOUS
PERVIOUS (i)
Surface Area (ha)= 1.49
Dep. Storage (mm)= 1.00
Average Slope (%)= 1.00
Length (m)= 123.65
Mannings n = 0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00
over (min) 5.00
Storage Coeff. (min)= 3.37 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.26

PEAK FLOW (cms)= 0.27
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 33.03
TOTAL RAINFALL (mm)= 34.03
RUNOFF COEFFICIENT = 0.97

TOTALS
0.277 (iii)
1.33
23.65
34.03
0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 0.84
Total Imp(%)= 65.00
Dir. Conn.(%)= 65.00

IMPERVIOUS
PERVIOUS (i)
Surface Area (ha)= 0.55
Dep. Storage (mm)= 1.00
Average Slope (%)= 1.00
Length (m)= 74.92
Mannings n = 0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00
over (min) 5.00
Storage Coeff. (min)= 2.49 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.29

PEAK FLOW (cms)= 0.10
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 33.03
TOTAL RAINFALL (mm)= 34.03
RUNOFF COEFFICIENT = 0.97

TOTALS
0.104 (iii)
1.33
23.64
34.03
0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0006)
ID= 1 DT= 5.0 min

Area (ha)= 0.63
Total Imp(%)= 65.00
Dir. Conn.(%)= 65.00

IMPERVIOUS
PERVIOUS (i)
Surface Area (ha)= 0.41
Dep. Storage (mm)= 1.00
Average Slope (%)= 1.00
Length (m)= 64.67
Mannings n = 0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97

1.000 7.88 | 2.000 6.84 | 3.000 2.97 | 4.00 1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 2.28 (ii) 21.71 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.30 0.05

PEAK FLOW (cms)= 0.08 0.00
TIME TO PEAK (hrs)= 1.33 1.67
RUNOFF VOLUME (mm)= 33.03 6.25
TOTAL RAINFALL (mm)= 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18

TOTALS
0.078 (iii)
0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0007)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.35 0.73
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 117.83 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.29 1.083 18.79 2.083 5.56 3.08 2.73
0.167 2.29 1.167 18.79 2.167 5.56 3.17 2.73
0.250 2.63 1.250 69.00 2.250 4.70 3.25 2.53
0.333 2.63 1.333 69.00 2.333 4.70 3.33 2.53
0.417 3.11 1.417 24.52 2.417 4.09 3.42 2.36
0.500 3.11 1.500 24.52 2.500 4.09 3.50 2.36
0.583 3.85 1.583 13.09 2.583 3.62 3.58 2.21
0.667 3.85 1.667 13.09 2.667 3.62 3.67 2.21
0.750 5.12 1.750 8.95 2.750 3.26 3.75 2.09
0.833 5.12 1.833 8.95 2.833 3.26 3.83 2.09
0.917 7.88 1.917 6.84 2.917 2.97 3.92 1.97
1.000 7.88 2.000 6.84 3.000 2.97 4.00 1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 3.27 (ii) 22.69 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.27 0.05

PEAK FLOW (cms)= 0.25 0.01
TIME TO PEAK (hrs)= 1.33 1.75
RUNOFF VOLUME (mm)= 33.03 6.25
TOTAL RAINFALL (mm)= 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 3.41
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.21 1.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00

Length (m)= 150.68 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.29 1.083 18.79 2.083 5.56 3.08 2.73
0.167 2.29 1.167 18.79 2.167 5.56 3.17 2.73
0.250 2.63 1.250 69.00 2.250 4.70 3.25 2.53
0.333 2.63 1.333 69.00 2.333 4.70 3.33 2.53
0.417 3.11 1.417 24.52 2.417 4.09 3.42 2.36
0.500 3.11 1.500 24.52 2.500 4.09 3.50 2.36
0.583 3.85 1.583 13.09 2.583 3.62 3.58 2.21
0.667 3.85 1.667 13.09 2.667 3.62 3.67 2.21
0.750 5.12 1.750 8.95 2.750 3.26 3.75 2.09
0.833 5.12 1.833 8.95 2.833 3.26 3.83 2.09
0.917 7.88 1.917 6.84 2.917 2.97 3.92 1.97
1.000 7.88 2.000 6.84 3.000 2.97 4.00 1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 3.79 (ii) 23.21 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.25 0.05

PEAK FLOW (cms)= 0.40 0.01
TIME TO PEAK (hrs)= 1.33 1.75
RUNOFF VOLUME (mm)= 33.03 6.25
TOTAL RAINFALL (mm)= 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.29 1.083 18.79 2.083 5.56 3.08 2.73
0.167 2.29 1.167 18.79 2.167 5.56 3.17 2.73
0.250 2.63 1.250 69.00 2.250 4.70 3.25 2.53
0.333 2.63 1.333 69.00 2.333 4.70 3.33 2.53
0.417 3.11 1.417 24.52 2.417 4.09 3.42 2.36
0.500 3.11 1.500 24.52 2.500 4.09 3.50 2.36
0.583 3.85 1.583 13.09 2.583 3.62 3.58 2.21
0.667 3.85 1.667 13.09 2.667 3.62 3.67 2.21
0.750 5.12 1.750 8.95 2.750 3.26 3.75 2.09
0.833 5.12 1.833 8.95 2.833 3.26 3.83 2.09
0.917 7.88 1.917 6.84 2.917 2.97 3.92 1.97
1.000 7.88 2.000 6.84 3.000 2.97 4.00 1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 2.20 (ii) 21.62 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.30 0.05

PEAK FLOW (cms)= 0.07 0.00
TIME TO PEAK (hrs)= 1.33 1.67
RUNOFF VOLUME (mm)= 33.03 6.25
TOTAL RAINFALL (mm)= 34.03 34.03

TOTALS
0.069 (iii)
1.33
23.63
34.03

RUNOFF COEFFICIENT = 0.97 0.18 0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 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	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min)= 5.00 25.00
Storage Coeff. (min)= 2.48 (ii) 21.90 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.03 0.01 0.033 (iii)
TIME TO PEAK (hrs)= 1.33 1.67 1.33
RUNOFF VOLUME (mm)= 33.03 6.25 11.59
TOTAL RAINFALL (mm)= 34.03 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18 0.34

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0001): 0.83 0.033 1.33 11.59
+ ID2= 2 (0002): 9.46 1.061 1.33 23.65
ID = 3 (0004): 10.29 1.095 1.33 22.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 3 (0004): 10.29 1.095 1.33 22.68
+ ID2= 2 (0003): 2.29 0.277 1.33 23.65

ID = 1 (0004): 12.58 1.372 1.33 22.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0004): 12.58 1.372 1.33 22.86
+ ID2= 2 (0005): 0.84 0.104 1.33 23.64
ID = 3 (0004): 13.43 1.477 1.33 22.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 3 (0004): 13.43 1.477 1.33 22.91
+ ID2= 2 (0006): 0.63 0.078 1.33 23.64
ID = 1 (0004): 14.05 1.555 1.33 22.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0004): 14.05 1.555 1.33 22.94
+ ID2= 2 (0007): 2.08 0.253 1.33 23.65
ID = 3 (0004): 16.14 1.807 1.33 23.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 3 (0004): 16.14 1.807 1.33 23.03
+ ID2= 2 (0008): 3.41 0.405 1.33 23.65
ID = 1 (0004): 19.54 2.213 1.33 23.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0004): 19.54 2.213 1.33 23.14
+ ID2= 2 (0009): 0.56 0.069 1.33 23.63
ID = 3 (0004): 20.10 2.282 1.33 23.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0019)
ID= 1 DT= 5.0 min

Area (ha)= 1.59
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.03 0.56
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 102.95 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	2.29	1.083	18.79	2.083	5.56	3.08	2.73

0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Max.Eff.Inten.(mm/hr)= 69.00 7.96
over (min) 5.00 25.00
Storage Coeff. (min)= 3.02 (ii) 22.44 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.28 0.05

TOTALS
PEAK FLOW (cms)= 0.19 0.01 0.194 (iii)
TIME TO PEAK (hrs)= 1.33 1.75 1.33
RUNOFF VOLUME (mm)= 33.03 6.25 23.65
TOTAL RAINFALL (mm)= 34.03 34.03 34.03
RUNOFF COEFFICIENT = 0.97 0.18 0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	1.59	0.194	1.33	23.65
+ ID2= 2 (0004):	20.10	2.282	1.33	23.15
ID = 3 (0012):	21.69	2.477	1.33	23.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OVERFLOW IS OFF				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.7662	0.9802
	0.0547	0.1537	0.8763	1.2181
	0.1004	0.3323	0.9740	1.4667
	0.4710	0.5374	1.0626	1.7264
	0.4710	0.5374	1.1285	1.9424
	0.6367	0.7532	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0012)	21.688	2.477	1.33	23.19
OUTFLOW: ID= 1 (0011)	21.688	0.171	2.75	23.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.90
TIME SHIFT OF PEAK FLOW (min)= 85.00
MAXIMUM STORAGE USED (ha.m.)= 0.3714

CALIB				
NASHYD (0013)				
ID= 1 DT= 5.0 min				
	Area (ha)	(ha)= 7.35	Curve Number (CN)= 65.0	
	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36

0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)= 0.101 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.067
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
NASHYD (0014)				
ID= 1 DT= 5.0 min				
	Area (ha)	(ha)= 9.62	Curve Number (CN)= 65.0	
	Ia	(mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	0.38		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97
1.000	7.88	2.000	6.84	3.000	2.97	4.00	1.97

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 5.082
TOTAL RAINFALL (mm)= 34.028
RUNOFF COEFFICIENT = 0.149

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
STANDHYD (0015)				
ID= 1 DT= 5.0 min				
	Area (ha)	(ha)= 3.85	Dir. Conn.(%)= 65.00	
	Total Imp(%)=	65.00		

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.50 1.35
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 160.10 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.29	1.083	18.79	2.083	5.56	3.08	2.73
0.167	2.29	1.167	18.79	2.167	5.56	3.17	2.73
0.250	2.63	1.250	69.00	2.250	4.70	3.25	2.53
0.333	2.63	1.333	69.00	2.333	4.70	3.33	2.53
0.417	3.11	1.417	24.52	2.417	4.09	3.42	2.36
0.500	3.11	1.500	24.52	2.500	4.09	3.50	2.36
0.583	3.85	1.583	13.09	2.583	3.62	3.58	2.21
0.667	3.85	1.667	13.09	2.667	3.62	3.67	2.21
0.750	5.12	1.750	8.95	2.750	3.26	3.75	2.09
0.833	5.12	1.833	8.95	2.833	3.26	3.83	2.09
0.917	7.88	1.917	6.84	2.917	2.97	3.92	1.97

1.000 7.88 | 2.000 6.84 | 3.000 2.97 | 4.00 1.97

Max.Eff.Inten.(mm/hr)= 69.00 20.64
over (min) 5.00 20.00
Storage Coeff. (min)= 3.93 (ii) 17.20 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.24 0.06

PEAK FLOW (cms)= 0.45 0.04 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.58 0.467 (iii)
RUNOFF VOLUME (mm)= 33.03 13.68 1.33
TOTAL RAINFALL (mm)= 34.03 34.03 26.25
RUNOFF COEFFICIENT = 0.97 0.40 34.03 0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. 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 (0016)
IN= 2 --> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0015)	3.845	0.467	1.33	26.25
OUTFLOW: ID= 1 (0016)	3.845	0.075	2.00	26.21

PEAK FLOW REDUCTION [qout/qin](%)= 16.00
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 0.0556

ADD HYD (0017)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	9.62	0.088	1.83	5.08
+ ID2= 2 (0016):	3.85	0.075	2.00	26.21
=====				
ID = 3 (0017):	13.47	0.162	1.83	11.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y Y M M O O
OOO T T H H Y Y M M OOO

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\7968.
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\7968.

DATE: 05/31/2022 TIME: 03:59:32

USER:

COMMENTS: _____

** SIMULATION : Cavan 25 Year **

CHICAGO STORM IDF curve parameters: A=2010.000
Ptotal= 61.50 mm B= 14.000
C= 0.880
used in: INTENSITY = A / (t + B)^C
Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.09	1.00	39.20	2.00	9.66	3.00	3.89
0.17	3.70	1.17	122.63	2.17	7.82	3.17	3.53
0.33	4.60	1.33	51.58	2.33	6.53	3.33	3.22
0.50	6.06	1.50	26.88	2.50	5.60	3.50	2.97
0.67	8.73	1.67	17.34	2.67	4.89	3.67	2.75
0.83	14.90	1.83	12.51	2.83	4.33	3.83	2.56

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 9.46
Total Imp(%)= 65.00
Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	6.15	3.31
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	251.17	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	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63 27.14
over (min) 5.00 20.00
Storage Coeff. (min)= 4.09 (ii) 15.98 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.24 0.07

PEAK FLOW (cms)= 1.97 0.15 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.58 2.023 (iii)
RUNOFF VOLUME (mm)= 60.50 18.29 45.73
TOTAL RAINFALL (mm)= 61.50 61.50 61.50
RUNOFF COEFFICIENT = 0.98 0.30 0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0003)
Area (ha)= 2.29

|ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.49	0.80
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	123.65	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Max.Eff.Inten.(mm/hr)=	122.63	27.14
over (min)	5.00	15.00
Storage Coeff. (min)=	2.67 (ii)	14.57 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.29	0.08

PEAK FLOW	(cms)=	0.50	0.04	*TOTALS*
TIME TO PEAK	(hrs)=	1.33	1.50	0.519 (iii)
RUNOFF VOLUME	(mm)=	60.50	18.29	45.72
TOTAL RAINFALL	(mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT	=	0.98	0.30	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.55	0.29
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	74.92	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Max.Eff.Inten.(mm/hr)=	122.63	27.14
over (min)	5.00	15.00
Storage Coeff. (min)=	1.98 (ii)	13.87 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00

Unit Hyd. peak (cms)=	0.31	0.08	*TOTALS*	
PEAK FLOW	(cms)=	0.19	0.01	0.193 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	60.50	18.29	45.72
TOTAL RAINFALL	(mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT	=	0.98	0.30	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.41	0.22
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	64.67	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66
0.167	3.09	1.167	39.20	2.167	9.66
0.250	3.70	1.250	122.63	2.250	7.82
0.333	3.70	1.333	122.63	2.333	7.82
0.417	4.60	1.417	51.58	2.417	6.53
0.500	4.60	1.500	51.58	2.500	6.53
0.583	6.06	1.583	26.88	2.583	5.60
0.667	6.06	1.667	26.88	2.667	5.60
0.750	8.73	1.750	17.34	2.750	4.89
0.833	8.73	1.833	17.34	2.833	4.89
0.917	14.90	1.917	12.51	2.917	4.33
1.000	14.90	2.000	12.51	3.000	4.33

Max.Eff.Inten.(mm/hr)=	122.63	27.14
over (min)	5.00	15.00
Storage Coeff. (min)=	1.81 (ii)	13.70 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

PEAK FLOW	(cms)=	0.14	0.01	*TOTALS*
TIME TO PEAK	(hrs)=	1.33	1.50	0.144 (iii)
RUNOFF VOLUME	(mm)=	60.50	18.29	45.72
TOTAL RAINFALL	(mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT	=	0.98	0.30	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.73
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	117.83	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	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63 27.14
over (min) 5.00 15.00
Storage Coeff. (min)= 2.60 (ii) 14.49 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.08

TOTALS
PEAK FLOW (cms)= 0.45 0.04 0.472 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 60.50 18.29 45.72
TOTAL RAINFALL (mm)= 61.50 61.50 61.50
RUNOFF COEFFICIENT = 0.98 0.30 0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 3.41
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.21 1.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 150.68 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63 27.14
over (min) 5.00 15.00
Storage Coeff. (min)= 3.01 (ii) 14.90 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08

TOTALS
PEAK FLOW (cms)= 0.74 0.06 0.763 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 60.50 18.29 45.72
TOTAL RAINFALL (mm)= 61.50 61.50 61.50
RUNOFF COEFFICIENT = 0.98 0.30 0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63 27.14
over (min) 5.00 15.00
Storage Coeff. (min)= 1.75 (ii) 13.64 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.32 0.08

TOTALS
PEAK FLOW (cms)= 0.12 0.01 0.128 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 60.50 18.29 45.72
TOTAL RAINFALL (mm)= 61.50 61.50 61.50
RUNOFF COEFFICIENT = 0.98 0.30 0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75

0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)=	122.63	27.14	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.97 (ii)	13.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.08	
PEAK FLOW (cms)=	0.06	0.03	*TOTALS* 0.073 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	60.50	18.29	26.73
TOTAL RAINFALL (mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT =	0.98	0.30	0.43

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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				
ID1= 1 (0001):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0002):	0.83	0.073	1.33	26.73
	9.46	2.023	1.33	45.73
ID = 3 (0004):	10.29	2.096	1.33	44.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
ID1= 3 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0003):	10.29	2.096	1.33	44.20
	2.29	0.519	1.33	45.72
ID = 1 (0004):	12.58	2.614	1.33	44.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0005):	12.58	2.614	1.33	44.47
	0.84	0.193	1.33	45.72
ID = 3 (0004):	13.43	2.807	1.33	44.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
ID1= 3 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0006):	13.43	2.807	1.33	44.55
	0.63	0.144	1.33	45.72
ID = 1 (0004):	14.05	2.951	1.33	44.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0007):	14.05	2.951	1.33	44.60
	2.08	0.472	1.33	45.72
ID = 3 (0004):	16.14	3.423	1.33	44.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
ID1= 3 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0008):	16.14	3.423	1.33	44.75
	3.41	0.763	1.33	45.72
ID = 1 (0004):	19.54	4.186	1.33	44.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0009):	19.54	4.186	1.33	44.92
	0.56	0.128	1.33	45.71
ID = 3 (0004):	20.10	4.314	1.33	44.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0019)	Area (ha)=	1.59		
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
Surface Area (ha)=	1.03	IMPERVIOUS	PERVIOUS (i)	
Dep. Storage (mm)=	1.00			
Average Slope (%)=	1.00			
Length (m)=	102.95			
Mannings n =	0.013			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)=	122.63	27.14	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.40 (ii)	14.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.30	0.08	
PEAK FLOW (cms)=	0.35	0.03	*TOTALS* 0.362 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	60.50	18.29	45.72
TOTAL RAINFALL (mm)=	61.50	61.50	61.50
RUNOFF COEFFICIENT =	0.98	0.30	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3				
ID1= 1 (0012):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0012):				

ID1= 1 (0019): 1.59 0.362 1.33 45.72
+ ID2= 2 (0004): 20.10 4.314 1.33 44.94
=====

ID = 3 (0012): 21.69 4.676 1.33 45.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7662	0.9802
0.0547	0.1537	0.8763	1.2181
0.1004	0.3323	0.9740	1.4667
0.4710	0.5374	1.0626	1.7264
0.4710	0.5374	1.1285	1.9424
0.6367	0.7532	0.0000	0.0000

INFLOW : ID= 2 (0012)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0011)	21.688	4.676	1.33	45.00
	21.688	0.559	2.17	44.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.95
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.6515

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)=	7.35	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)= 0.380 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.466
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0014)
ID= 1 DT= 5.0 min

Area (ha)=	9.62	Curve Number (CN)=	65.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.38		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97

0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.330 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 16.514
TOTAL RAINFALL (mm)= 61.498
RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0015)
ID= 1 DT= 5.0 min

Area (ha)=	3.85	Dir. Conn.(%)=	65.00
Total Imp(%)=	65.00		

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.50
Dep. Storage (mm)=	1.00
Average Slope (%)=	1.00
Length (m)=	160.10
Mannings n =	0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.09	1.083	39.20	2.083	9.66	3.08	3.89
0.167	3.09	1.167	39.20	2.167	9.66	3.17	3.89
0.250	3.70	1.250	122.63	2.250	7.82	3.25	3.53
0.333	3.70	1.333	122.63	2.333	7.82	3.33	3.53
0.417	4.60	1.417	51.58	2.417	6.53	3.42	3.22
0.500	4.60	1.500	51.58	2.500	6.53	3.50	3.22
0.583	6.06	1.583	26.88	2.583	5.60	3.58	2.97
0.667	6.06	1.667	26.88	2.667	5.60	3.67	2.97
0.750	8.73	1.750	17.34	2.750	4.89	3.75	2.75
0.833	8.73	1.833	17.34	2.833	4.89	3.83	2.75
0.917	14.90	1.917	12.51	2.917	4.33	3.92	2.56
1.000	14.90	2.000	12.51	3.000	4.33	4.00	2.56

Max.Eff.Inten.(mm/hr)= 122.63 66.31
over (min) 5.00 15.00
Storage Coeff. (min)= 3.12 (ii) 11.44 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.09

TOTALS

PEAK FLOW (cms)= 0.83 0.15 0.911 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 60.50 34.34 51.34
TOTAL RAINFALL (mm)= 61.50 61.50 61.50
RUNOFF COEFFICIENT = 0.98 0.56 0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. 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(0016)
IN= 2--> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

INFLOW : ID= 2 (0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0016)	3.845	0.911	1.33	51.34
	3.845	0.142	2.00	51.29

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.58
TIME SHIFT OF PEAK FLOW (min)= 40.00

MAXIMUM STORAGE USED (ha.m.)= 0.1188

ADD HYD (0017)				
1 + 2 = 3				
ID1= 1 (0014):	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0016):	9.62	0.330	1.83	16.51
	3.85	0.142	2.00	51.29
ID = 3 (0017):	13.47	0.471	1.83	26.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUU A A LLLLL

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y Y M M O O
OOO T T H H Y Y M M OOO

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2021 Smart City Water Inc
All rights reserved.

***** 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\voim.dat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\acf8
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\acf8

DATE: 05/31/2022 TIME: 03:59:32

USER:

COMMENTS: _____

** SIMULATION : Cavan 5 Year **

CHICAGO STORM IDF curve parameters: A=1098.000
Ptotal= 44.88 mm B= 10.100
C= 0.830
used in: INTENSITY = A / (t + B)^{AC}
Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.66	1.00	26.50	2.00	7.15	3.00	3.24
0.17	3.11	1.17	90.98	2.17	5.94	3.17	2.98
0.33	3.75	1.33	34.82	2.33	5.08	3.33	2.76
0.50	4.75	1.50	18.23	2.50	4.44	3.50	2.57
0.67	6.53	1.67	12.10	2.67	3.95	3.67	2.41
0.83	10.53	1.83	9.00	2.83	3.56	3.83	2.26

CALIB STANDHYD (0002)
ID= 1 DT= 5.0 min Area (ha)= 9.46
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area (ha)= 6.15 IMPERVIOUS 3.31
Dep. Storage (mm)= 1.00 PERVIOUS (i) 1.50
Average Slope (%)= 1.00 2.00

Length (m)= 251.17 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min) 5.00 25.00
Storage Coeff. (min)= 4.61 (ii) 20.13 (iii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.22 0.05
PEAK FLOW (cms)= 1.42 0.07 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.67 1.444 (iii)
RUNOFF VOLUME (mm)= 43.88 10.45 32.18
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0003)
ID= 1 DT= 5.0 min Area (ha)= 2.29
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area (ha)= 1.49 IMPERVIOUS 0.80
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 123.65 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min) 5.00 20.00
Storage Coeff. (min)= 3.01 (ii) 18.53 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.06

PEAK FLOW (cms)= 0.37 0.02 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.67 0.373 (iii)
RUNOFF VOLUME (mm)= 43.88 10.45 32.18
TOTAL RAINFALL (mm)= 44.88 44.88 44.88

RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 0.84
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.55 0.29
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.92 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24				
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24				
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98				
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98				
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76				
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76				
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57				
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57				
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41				
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41				
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26				
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26				

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.23 (ii) 17.75 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.30 0.06

PEAK FLOW (cms)= 0.14 0.01 0.140 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 43.88 10.45 32.17
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0006)
ID= 1 DT= 5.0 min

Area (ha)= 0.63
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.41 0.22
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 64.67 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24				
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24				
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98				

0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.04 (ii) 17.56 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.06

PEAK FLOW (cms)= 0.10 0.01 0.104 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 43.88 10.45 32.16
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0007)
ID= 1 DT= 5.0 min

Area (ha)= 2.08
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.35 0.73
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 117.83 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24				
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24				
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98				
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98				
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76				
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76				
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57				
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57				
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41				
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41				
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26				
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26				

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.93 (ii) 18.45 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.06

PEAK FLOW (cms)= 0.33 0.02 0.340 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 43.88 10.45 32.18
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 3.41
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.21 1.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 150.68 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 2.66 1.083 26.50 2.083 7.15 3.08 3.24
0.167 2.66 1.167 26.50 2.167 7.15 3.17 3.24
0.250 3.11 1.250 90.98 2.250 5.94 3.25 2.98
0.333 3.11 1.333 90.98 2.333 5.94 3.33 2.98
0.417 3.75 1.417 34.82 2.417 5.08 3.42 2.76
0.500 3.75 1.500 34.82 2.500 5.08 3.50 2.76
0.583 4.75 1.583 18.23 2.583 4.44 3.58 2.57
0.667 4.75 1.667 18.23 2.667 4.44 3.67 2.57
0.750 6.53 1.750 12.10 2.750 3.95 3.75 2.41
0.833 6.53 1.833 12.10 2.833 3.95 3.83 2.41
0.917 10.53 1.917 9.00 2.917 3.56 3.92 2.26
1.000 10.53 2.000 9.00 3.000 3.56 4.00 2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min) 5.00 20.00
Storage Coeff. (min)= 3.39 (ii) 18.91 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.26 0.06

PEAK FLOW (cms)= 0.54 0.03 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.67 0.548 (iii)
RUNOFF VOLUME (mm)= 43.88 10.45 32.18
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 2.66 1.083 26.50 2.083 7.15 3.08 3.24
0.167 2.66 1.167 26.50 2.167 7.15 3.17 3.24
0.250 3.11 1.250 90.98 2.250 5.94 3.25 2.98
0.333 3.11 1.333 90.98 2.333 5.94 3.33 2.98
0.417 3.75 1.417 34.82 2.417 5.08 3.42 2.76
0.500 3.75 1.500 34.82 2.500 5.08 3.50 2.76
0.583 4.75 1.583 18.23 2.583 4.44 3.58 2.57
0.667 4.75 1.667 18.23 2.667 4.44 3.67 2.57
0.750 6.53 1.750 12.10 2.750 3.95 3.75 2.41
0.833 6.53 1.833 12.10 2.833 3.95 3.83 2.41
0.917 10.53 1.917 9.00 2.917 3.56 3.92 2.26
1.000 10.53 2.000 9.00 3.000 3.56 4.00 2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min) 5.00 20.00

Storage Coeff. (min)= 1.97 (ii) 17.49 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.06

PEAK FLOW (cms)= 0.09 0.00 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.58 0.093 (iii)
RUNOFF VOLUME (mm)= 43.88 10.45 32.18
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 2.66 1.083 26.50 2.083 7.15 3.08 3.24
0.167 2.66 1.167 26.50 2.167 7.15 3.17 3.24
0.250 3.11 1.250 90.98 2.250 5.94 3.25 2.98
0.333 3.11 1.333 90.98 2.333 5.94 3.33 2.98
0.417 3.75 1.417 34.82 2.417 5.08 3.42 2.76
0.500 3.75 1.500 34.82 2.500 5.08 3.50 2.76
0.583 4.75 1.583 18.23 2.583 4.44 3.58 2.57
0.667 4.75 1.667 18.23 2.667 4.44 3.67 2.57
0.750 6.53 1.750 12.10 2.750 3.95 3.75 2.41
0.833 6.53 1.833 12.10 2.833 3.95 3.83 2.41
0.917 10.53 1.917 9.00 2.917 3.56 3.92 2.26
1.000 10.53 2.000 9.00 3.000 3.56 4.00 2.26

Max.Eff.Inten.(mm/hr)= 90.98 13.95
over (min) 5.00 20.00
Storage Coeff. (min)= 2.22 (ii) 17.74 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.30 0.06

PEAK FLOW (cms)= 0.04 0.02 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.58 0.047 (iii)
RUNOFF VOLUME (mm)= 43.88 10.45 17.12
TOTAL RAINFALL (mm)= 44.88 44.88 44.88
RUNOFF COEFFICIENT = 0.98 0.23 0.38

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (0001): 0.83 0.047 1.33 17.12
+ ID2= 2 (0002): 9.46 1.444 1.33 32.18
ID = 3 (0004): 10.29 1.491 1.33 30.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Max. Eff. Inten. (mm/hr)=	90.98	13.95	
over (min)	5.00	20.00	
Storage Coeff. (min)	2.70	18.22	(ii)
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.29	0.06	
PEAK FLOW (cms)	0.26	0.01	*TOTALS*
TIME TO PEAK (hrs/c)	1.33	1.33	0.261 (iii)
RUNOFF VOLUME (mm)	43.88	10.45	32.17
TOTAL RAINFALL (mm)	44.88	44.88	44.88
RUNOFF COEFFICIENT =	0.98	0.23	0.72

```
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

PEAK FLOW REDUCTION	[Qout/Qin](%)=	10.36
TIME SHIFT OF PEAK FLOW	(min)=	55.00
MAXIMUM STORAGE USED	(ha.m.)=	0.4690

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	2.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)= 0.195 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 8.977
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.200

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0014) ID= 1 DT= 5.0 min	Area (ha)= 9.62 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.38	Curve Number (CN)= 65.0 # 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	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98
0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	2.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.169 (i)
 TIME TO PEAK (hrs)= 1.833
 RUNOFF VOLUME (mm)= 9.003
 TOTAL RAINFALL (mm)= 44.883
 RUNOFF COEFFICIENT = 0.201

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0015) ID= 1 DT= 5.0 min	Area (ha)= 3.85 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

Surface Area (ha)= 2.50	IMPERVIOUS 1.35	PERVIOUS (i) 1.50
Dep. Storage (mm)= 1.00		
Average Slope (%)= 1.00		
Length (m)= 160.10		
Mannings n = 0.013		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.66	1.083	26.50	2.083	7.15	3.08	3.24
0.167	2.66	1.167	26.50	2.167	7.15	3.17	3.24
0.250	3.11	1.250	90.98	2.250	5.94	3.25	2.98

0.333	3.11	1.333	90.98	2.333	5.94	3.33	2.98
0.417	3.75	1.417	34.82	2.417	5.08	3.42	2.76
0.500	3.75	1.500	34.82	2.500	5.08	3.50	2.76
0.583	4.75	1.583	18.23	2.583	4.44	3.58	2.57
0.667	4.75	1.667	18.23	2.667	4.44	3.67	2.57
0.750	6.53	1.750	12.10	2.750	3.95	3.75	2.41
0.833	6.53	1.833	12.10	2.833	3.95	3.83	2.41
0.917	10.53	1.917	9.00	2.917	3.56	3.92	2.26
1.000	10.53	2.000	9.00	3.000	3.56	4.00	2.26

Max.Eff.Inten.(mm/hr)= 90.98
 over (min)= 5.00
 Storage Coeff. (min)= 3.52 (ii)
 Unit Hyd. Tpeak (min)= 5.00
 Unit Hyd. peak (cms)= 0.26

TOTALS

PEAK FLOW (cms)= 0.61
 TIME TO PEAK (hrs)= 1.33
 RUNOFF VOLUME (mm)= 43.88
 TOTAL RAINFALL (mm)= 44.88
 RUNOFF COEFFICIENT = 0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 85.0 Ia = Dep. 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(0016) IN= 2---> OUT= 1 DT= 5.0 min	OVERFLOW IS OFF
---	-----------------

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.845	0.647	1.33	35.99
3.845	0.103	2.00	35.94

INFLOW : ID= 2 (0015)
 OUTFLOW: ID= 1 (0016)

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.99
 TIME SHIFT OF PEAK FLOW (min)= 40.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0794

ADD HYD (0017) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
------------------------------	-----------	-------------	-------------	-----------

ID1= 1 (0014):	9.62	0.169	1.83	9.00
+ ID2= 2 (0016):	3.85	0.103	2.00	35.94
ID = 3 (0017):	13.47	0.271	1.83	16.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSSS U U A L (v 6.2.2008)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

```

```

OOO TTTT TTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

```

Developed and Distributed by Smart City Water Inc
 Copyright 2007 - 2021 Smart City Water Inc
 All rights reserved.

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\vo.in.dat
 Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\3385.
 Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\XH5\2d72d463-88b2-4899-a37e-038f85e29de8\3385.

DATE: 05/31/2022 TIME: 03:59:32
USER:

COMMENTS: _____

** SIMULATION : Cavan 50 Year **

CHICAGO STORM Ptotal= 71.00 mm		IDF curve parameters: A=2200.000 B= 14.600 C= 0.870		used in: INTENSITY = A / (t + B)^C	
Duration of storm = 4.00 hrs		Storm time step = 10.00 min		Time to peak ratio = 0.33	
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.80	1.00	45.14	2.00	11.57
0.17	4.53	1.17	135.62	2.17	9.41
0.33	5.61	1.33	58.97	2.33	7.90
0.50	7.33	1.50	31.37	2.50	6.79
0.67	10.47	1.67	20.48	2.67	5.95
0.83	17.66	1.83	14.89	2.83	5.28

CALIB STANDHYD (0002) ID= 1 DT= 5.0 min	Area (ha)= 9.46 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

Surface Area (ha)= 6.15	PERVIOUS (i) 3.31
Dep. Storage (mm)= 1.00	1.50
Average Slope (%)= 1.00	2.00
Length (m)= 251.17	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs		RAIN mm/hr		TIME hrs		RAIN mm/hr	
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)= 135.62	*****
over (min) 5.00	10.00
Storage Coeff. (min)= 3.93	(ii) 8.81 (ii)
Unit Hyd. Tpeak (min)= 5.00	10.00
Unit Hyd. peak (cms)= 0.24	0.12
PEAK FLOW (cms)= 2.19	0.26
TIME TO PEAK (hrs)= 1.33	1.42
RUNOFF VOLUME (mm)= 70.00	23.42
TOTAL RAINFALL (mm)= 71.00	71.00
RUNOFF COEFFICIENT = 0.99	0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0003) ID= 1 DT= 5.0 min	Area (ha)= 2.29 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

Surface Area (ha)= 1.49	PERVIOUS (i) 0.80
Dep. Storage (mm)= 1.00	1.50
Average Slope (%)= 1.00	2.00
Length (m)= 123.65	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs		RAIN mm/hr		TIME hrs		RAIN mm/hr	
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)= 135.62	*****
over (min) 5.00	10.00
Storage Coeff. (min)= 2.57	(ii) 7.45 (ii)
Unit Hyd. Tpeak (min)= 5.00	10.00
Unit Hyd. peak (cms)= 0.29	0.13
PEAK FLOW (cms)= 0.55	0.07
TIME TO PEAK (hrs)= 1.33	1.42
RUNOFF VOLUME (mm)= 70.00	23.42
TOTAL RAINFALL (mm)= 71.00	71.00
RUNOFF COEFFICIENT = 0.99	0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 0.84 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

Surface Area (ha)= 0.55	PERVIOUS (i) 0.29
Dep. Storage (mm)= 1.00	1.50
Average Slope (%)= 1.00	2.00
Length (m)= 74.92	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs		RAIN mm/hr		TIME hrs		RAIN mm/hr	
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39

0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)=	135.62	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.90	(ii)	6.78 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.14	
		TOTALS	
PEAK FLOW (cms)=	0.21	0.03	0.226 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	70.00	23.42	53.69
TOTAL RAINFALL (mm)=	71.00	71.00	71.00
RUNOFF COEFFICIENT =	0.99	0.33	0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0006) ID= 1 DT= 5.0 min	Area (ha)= 0.63 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.41	0.22
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	64.67	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)=	135.62	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.74	(ii)	6.62 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.14	
		TOTALS	
PEAK FLOW (cms)=	0.15	0.02	0.169 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	70.00	23.42	53.69
TOTAL RAINFALL (mm)=	71.00	71.00	71.00
RUNOFF COEFFICIENT =	0.99	0.33	0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0007) ID= 1 DT= 5.0 min	Area (ha)= 2.08 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.35	0.73

Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	117.83	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)=	135.62	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.50	(ii)	7.37 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.13	
		TOTALS	
PEAK FLOW (cms)=	0.50	0.06	0.552 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	70.00	23.42	53.69
TOTAL RAINFALL (mm)=	71.00	71.00	71.00
RUNOFF COEFFICIENT =	0.99	0.33	0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 3.41 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.21	1.19
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	150.68	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)=	135.62	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.89	(ii)	7.77 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.13	
		TOTALS	
PEAK FLOW (cms)=	0.82	0.10	0.893 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33

RUNOFF VOLUME (mm)= 70.00 23.42 53.69
TOTAL RAINFALL (mm)= 71.00 71.00 71.00
RUNOFF COEFFICIENT = 0.99 0.33 0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)= 135.62
over (min)= 5.00
Storage Coeff. (min)= 1.68 (ii) 6.56 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32 0.14

PEAK FLOW (cms)= 0.14 0.02
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 70.00 23.42
TOTAL RAINFALL (mm)= 71.00 71.00
RUNOFF COEFFICIENT = 0.99 0.33

TOTALS
0.150 (iii)
1.33
53.69
71.00
0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 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	3.80	1.083	45.14	2.083	11.57	3.08	4.75

0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)= 135.62
over (min)= 5.00
Storage Coeff. (min)= 1.89 (ii) 12.80 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.06 0.04
TIME TO PEAK (hrs)= 1.33 1.50
RUNOFF VOLUME (mm)= 70.00 23.42
TOTAL RAINFALL (mm)= 71.00 71.00
RUNOFF COEFFICIENT = 0.99 0.33

TOTALS
0.084 (iii)
1.33
32.72
71.00
0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	0.83	0.084	1.33	32.72
+ ID2= 2 (0002):	9.46	2.393	1.33	53.69
ID = 3 (0004):	10.29	2.477	1.33	52.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	10.29	2.477	1.33	52.00
+ ID2= 2 (0003):	2.29	0.607	1.33	53.69
ID = 1 (0004):	12.58	3.084	1.33	52.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	12.58	3.084	1.33	52.31
+ ID2= 2 (0005):	0.84	0.226	1.33	53.69
ID = 3 (0004):	13.43	3.309	1.33	52.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	13.43	3.309	1.33	52.40
+ ID2= 2 (0006):	0.63	0.169	1.33	53.69
ID = 1 (0004):	14.05	3.478	1.33	52.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0007):	14.05	3.478	1.33	52.46
ID = 3 (0004):	2.08	0.552	1.33	53.69
	16.14	4.030	1.33	52.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
ID1= 3 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0008):	16.14	4.030	1.33	52.62
ID = 1 (0004):	3.41	0.893	1.33	53.69
	19.54	4.923	1.33	52.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
ID1= 1 (0004):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0009):	19.54	4.923	1.33	52.80
ID = 3 (0004):	0.56	0.150	1.33	53.69
	20.10	5.072	1.33	52.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0019)	Area (ha)=	1.59	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.03	0.56
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	102.95	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)=	135.62	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	2.30 (ii)	7.18 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.30	0.14

PEAK FLOW (cms)=	0.39	0.05	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.42	0.423 (iii)
RUNOFF VOLUME (mm)=	70.00	23.42	53.69
TOTAL RAINFALL (mm)=	71.00	71.00	71.00
RUNOFF COEFFICIENT =	0.99	0.33	0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3				
ID1= 1 (0019):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0004):	1.59	0.423	1.33	53.69
ID = 3 (0012):	20.10	5.072	1.33	52.83
	21.69	5.495	1.33	52.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)		OVERFLOW IS OFF			
IN= 2--> OUT= 1					
DT= 5.0 min					
		OUTFLOW	STORAGE	OUTFLOW	STORAGE
		(cms)	(ha.m.)	(cms)	(ha.m.)
		0.0000	0.0000	0.7662	0.9802
		0.0547	0.1537	0.8763	1.2181
		0.1004	0.3323	0.9740	1.4667
		0.4710	0.5374	1.0626	1.7264
		0.4710	0.5374	1.1285	1.9424
		0.6367	0.7532	0.0000	0.0000
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0012)		21.688	5.495	1.33	52.89
OUTFLOW: ID= 1 (0011)		21.688	0.644	2.08	52.86

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.71
TIME SHIFT OF PEAK FLOW (min)= 45.00
MAXIMUM STORAGE USED (ha.m.)= 0.7655

CALIB NASHYD (0013)	Area (ha)=	7.35	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)=	0.484 (i)
TIME TO PEAK (hrs)=	1.500
RUNOFF VOLUME (mm)=	21.415
TOTAL RAINFALL (mm)=	70.997
RUNOFF COEFFICIENT =	0.302

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0014)	Area (ha)=	9.62	Curve Number (CN)=	65.0
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.38		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75	
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75	
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32	
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32	
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96	
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96	
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65	
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65	
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39	
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39	
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16	
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16	

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.423 (i)
 TIME TO PEAK (hrs)= 1.833
 RUNOFF VOLUME (mm)= 21.477
 TOTAL RAINFALL (mm)= 70.997
 RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
 STANDHYD (0015)
 ID= 1 DT= 5.0 min

Area (ha)= 3.85
 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 2.50 1.35
 Dep. Storage (mm)= 1.00 1.50
 Average Slope (%)= 1.00 2.00
 Length (m)= 160.10 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HETEOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.80	1.083	45.14	2.083	11.57	3.08	4.75
0.167	3.80	1.167	45.14	2.167	11.57	3.17	4.75
0.250	4.53	1.250	135.62	2.250	9.41	3.25	4.32
0.333	4.53	1.333	135.62	2.333	9.41	3.33	4.32
0.417	5.61	1.417	58.97	2.417	7.90	3.42	3.96
0.500	5.61	1.500	58.97	2.500	7.90	3.50	3.96
0.583	7.33	1.583	31.37	2.583	6.79	3.58	3.65
0.667	7.33	1.667	31.37	2.667	6.79	3.67	3.65
0.750	10.47	1.750	20.48	2.750	5.95	3.75	3.39
0.833	10.47	1.833	20.48	2.833	5.95	3.83	3.39
0.917	17.66	1.917	14.89	2.917	5.28	3.92	3.16
1.000	17.66	2.000	14.89	3.000	5.28	4.00	3.16

Max.Eff.Inten.(mm/hr)= 135.62
 over (min)= 5.00
 Storage Coeff. (min)= 3.00 (ii) 7.88 (ii)
 Unit Hyd. Tpeak (min)= 5.00
 Unit Hyd. peak (cms)= 0.28 0.13

TOTALS
 PEAK FLOW (cms)= 0.92 1.101 (iii)
 TIME TO PEAK (hrs)= 1.33 1.33
 RUNOFF VOLUME (mm)= 70.00 42.25 60.28
 TOTAL RAINFALL (mm)= 71.00 71.00 71.00
 RUNOFF COEFFICIENT = 0.99 0.60 0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 85.0 Ia = Dep. 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(0016)
 IN= 2--> OUT= 1
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

INFLOW : ID= 2 (0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (0016)	3.845	1.101	1.33	60.28
	3.845	0.158	2.00	60.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.31
 TIME SHIFT OF PEAK FLOW (min)= 40.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1416

ADD HYD (0017)
 1 + 2 = 3

ID1= 1 (0014):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID2= 2 (0016):	9.62	0.423	1.83	21.48
	3.85	0.158	2.00	60.24
ID = 3 (0017):	13.47	0.579	1.83	32.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2008)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 VV I SSSSS UUUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
 O O T T H H Y Y M M O O
 O O T T H H Y Y M M O O
 000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc
 Copyright 2007 - 2021 Smart City Water Inc
 All rights reserved.

***** 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\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\3426
 Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\3426

DATE: 05/31/2022

TIME: 03:59:32

USER:

COMMENTS:

 ** SIMULATION : PETERBOROUGH 100 YEAR

READ STORM Filename: C:\Users\matthew.holmes\AppData
 Local\Temp\
 b67c12bc-509d-4f8c-a983-54b7004b9d9c\6dc24be0
 Ptotal= 89.93 mm Comments: PETERBOROUGH-SCS-6HR-100YR

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs
0.00	0.00	1.75	9.00	3.50	19.80	5.25	3.60	
0.25	3.60	2.00	9.00	3.75	9.00	5.50	3.60	
0.50	3.60	2.25	10.80	4.00	9.00	5.75	3.60	
0.75	5.40	2.50	10.80	4.25	7.20	6.00	3.60	
1.00	5.40	2.75	53.90	4.50	7.20			
1.25	5.40	3.00	140.20	4.75	5.40			
1.50	5.40	3.25	19.80	5.00	5.40			

CALIB
 STANDHYD (0002) Area (ha)= 9.46

|ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	6.15	3.31
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	251.17	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	3.88 (ii)	8.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.12

PEAK FLOW (cms)=	2.36	0.45	2.812 (iii)
TIME TO PEAK (hrs)=	3.25	3.25	3.25
RUNOFF VOLUME (mm)=	88.92	34.72	69.95
TOTAL RAINFALL (mm)=	89.93	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39	0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	2.29
STANDHYD (0003)	Total Imp(%)=	65.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.49	0.80
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	123.65	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00

0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	2.53 (ii)	7.35 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.13

PEAK FLOW (cms)=	0.58	0.12	0.695 (iii)
TIME TO PEAK (hrs)=	3.25	3.25	3.25
RUNOFF VOLUME (mm)=	88.93	34.72	69.95
TOTAL RAINFALL (mm)=	89.93	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39	0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	0.84
STANDHYD (0005)	Total Imp(%)=	65.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.55	0.29
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	74.92	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20
0.167	0.00	1.750	5.40	3.333	19.80
0.250	0.00	1.833	9.00	3.417	19.80
0.333	3.60	1.917	9.00	3.500	19.80
0.417	3.60	2.000	9.00	3.583	19.80
0.500	3.60	2.083	9.00	3.667	19.80
0.583	3.60	2.167	9.00	3.750	19.80
0.667	3.60	2.250	9.00	3.833	9.00
0.750	3.60	2.333	10.80	3.917	9.00
0.833	5.40	2.417	10.80	4.000	9.00
0.917	5.40	2.500	10.80	4.083	9.00
1.000	5.40	2.583	10.80	4.167	9.00
1.083	5.40	2.667	10.80	4.250	9.00
1.167	5.40	2.750	10.80	4.333	7.20
1.250	5.40	2.833	53.90	4.417	7.20
1.333	5.40	2.917	53.90	4.500	7.20
1.417	5.40	3.000	53.90	4.583	7.20
1.500	5.40	3.083	140.20	4.667	7.20
1.583	5.40	3.167	140.20	4.750	7.20

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	1.88 (ii)	6.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.32	0.14

PEAK FLOW (cms)=	0.21	0.04	0.257 (iii)
TIME TO PEAK (hrs)=	3.25	3.25	3.25
RUNOFF VOLUME (mm)=	88.93	34.72	69.95
TOTAL RAINFALL (mm)=	89.93	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39	0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN* = 65.0 Ia = Dep. 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 (0006) ID= 1 DT= 5.0 min	Area (ha)= 0.63 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.41	0.22
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	64.67	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	1.72 (ii)	6.53 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.32	0.14
PEAK FLOW (cms)=	0.16	0.03
TIME TO PEAK (hrs)=	3.25	3.25
RUNOFF VOLUME (mm)=	88.93	34.72
TOTAL RAINFALL (mm)=	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39

TOTALS
0.192 (iii)
3.25
69.95
89.93
0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0007) ID= 1 DT= 5.0 min	Area (ha)= 2.08 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.35	0.73
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	117.83	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40

0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	2.46 (ii)	7.28 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.30	0.14
PEAK FLOW (cms)=	0.53	0.10
TIME TO PEAK (hrs)=	3.25	3.25
RUNOFF VOLUME (mm)=	88.93	34.72
TOTAL RAINFALL (mm)=	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39

TOTALS
0.631 (iii)
3.25
69.95
89.93
0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 3.41 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.21	1.19
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	150.68	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)=	140.20	*****
over (min)	5.00	10.00
Storage Coeff. (min)=	2.85 (ii)	7.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.13

TOTALS

PEAK FLOW (cms)= 0.86 0.17 1.028 (iii)
TIME TO PEAK (hrs)= 3.25 3.25 3.25
RUNOFF VOLUME (mm)= 88.92 34.72 69.95
TOTAL RAINFALL (mm)= 89.93 89.93 89.93
RUNOFF COEFFICIENT = 0.99 0.39 0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min

Area (ha)= 0.56
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)= 140.20
over (min)= 5.00
Storage Coeff. (min)= 1.66 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32

PEAK FLOW (cms)= 0.14 0.03
TIME TO PEAK (hrs)= 3.25 3.25
RUNOFF VOLUME (mm)= 88.92 34.72
TOTAL RAINFALL (mm)= 89.93 89.93
RUNOFF COEFFICIENT = 0.99 0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.83
Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)= 140.20
over (min)= 5.00
Storage Coeff. (min)= 1.87 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.32

PEAK FLOW (cms)= 0.06 0.08
TIME TO PEAK (hrs)= 3.25 3.33
RUNOFF VOLUME (mm)= 88.93 34.72
TOTAL RAINFALL (mm)= 89.93 89.93
RUNOFF COEFFICIENT = 0.99 0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	0.83	0.134	3.25	45.55
+ ID2= 2 (0002):	9.46	2.812	3.25	69.95
ID = 3 (0004):	10.29	2.946	3.25	67.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0004):	10.29	2.946	3.25	67.99
+ ID2= 2 (0003):	2.29	0.695	3.25	69.95
ID = 1 (0004):	12.58	3.641	3.25	68.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	12.58	3.641	3.25	68.35
+ ID2= 2 (0005):	0.84	0.257	3.25	69.95
ID = 3 (0004):	13.43	3.897	3.25	68.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0004):	13.43	3.897	3.25	68.45
+ ID2= 2 (0006):	0.63	0.192	3.25	69.95
=====				
ID = 1 (0004):	14.05	4.089	3.25	68.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0004):	14.05	4.089	3.25	68.51
+ ID2= 2 (0007):	2.08	0.631	3.25	69.95
=====				
ID = 3 (0004):	16.14	4.720	3.25	68.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0004):	16.14	4.720	3.25	68.70
+ ID2= 2 (0008):	3.41	1.028	3.25	69.95
=====				
ID = 1 (0004):	19.54	5.748	3.25	68.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0004):	19.54	5.748	3.25	68.92
+ ID2= 2 (0009):	0.56	0.170	3.25	69.94
=====				
ID = 3 (0004):	20.10	5.918	3.25	68.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0019)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	1.59	
	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
IMPERVIOUS PERVIOUS (i)				
Surface Area	(ha)=	1.03	0.56	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	102.95	40.00	
Mannings n	=	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60

1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)=	140.20	*****	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.27	(ii)	7.08 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.14	
TOTALS			
PEAK FLOW (cms)=	0.40	0.08	0.483 (iii)
TIME TO PEAK (hrs)=	3.25	3.25	3.25
RUNOFF VOLUME (mm)=	88.93	34.72	69.95
TOTAL RAINFALL (mm)=	89.93	89.93	89.93
RUNOFF COEFFICIENT =	0.99	0.39	0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):	1.59	0.483	3.25	69.95
+ ID2= 2 (0004):	20.10	5.918	3.25	68.95
=====				
ID = 3 (0012):	21.69	6.401	3.25	69.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 5.0 min				
OVERFLOW IS OFF				
OUTFLOW	STORAGE	OUTFLOW	STORAGE	
(cms)	(ha.m.)	(cms)	(ha.m.)	
0.0000	0.0000	0.7662	0.9802	
0.0547	0.1537	0.8763	1.2181	
0.1004	0.3323	0.9740	1.4667	
0.4710	0.5374	1.0626	1.7264	
0.4710	0.5374	1.1285	1.9424	
0.6367	0.7532	0.0000	0.0000	
AREA QPEAK TPEAK R.V.				
(ha) (cms) (hrs) (mm)				
INFLOW : ID= 2 (0012)	21.688	6.401	3.25	69.02
OUTFLOW: ID= 1 (0011)	21.688	0.773	3.83	68.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.08
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.9963

CALIB NASHYD (0013)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	7.35	Curve Number (CN)= 65.0
	Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60

1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)= 0.856 (i)
 TIME TO PEAK (hrs)= 3.333
 RUNOFF VOLUME (mm)= 32.434
 TOTAL RAINFALL (mm)= 89.925
 RUNOFF COEFFICIENT = 0.361

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB							
NASHYD (0014)	Area (ha)=	9.62	Curve Number (CN)=	65.0			
ID= 1 DT= 5.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.38					

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40
0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.677 (i)
 TIME TO PEAK (hrs)= 3.500
 RUNOFF VOLUME (mm)= 32.528
 TOTAL RAINFALL (mm)= 89.925
 RUNOFF COEFFICIENT = 0.362

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB							
STANDHYD (0015)	Area (ha)=	3.85					
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00			

IMPERVIOUS				PERVIOUS (i)			
Surface Area	(ha)=	2.50		1.35			
Dep. Storage	(mm)=	1.00		1.50			
Average Slope	(%)=	1.00		2.00			
Length	(m)=	160.10		40.00			
Mannings n	=	0.013		0.250			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.40	3.250	140.20	4.83	5.40
0.167	0.00	1.750	5.40	3.333	19.80	4.92	5.40
0.250	0.00	1.833	9.00	3.417	19.80	5.00	5.40
0.333	3.60	1.917	9.00	3.500	19.80	5.08	5.40

0.417	3.60	2.000	9.00	3.583	19.80	5.17	5.40
0.500	3.60	2.083	9.00	3.667	19.80	5.25	5.40
0.583	3.60	2.167	9.00	3.750	19.80	5.33	3.60
0.667	3.60	2.250	9.00	3.833	9.00	5.42	3.60
0.750	3.60	2.333	10.80	3.917	9.00	5.50	3.60
0.833	5.40	2.417	10.80	4.000	9.00	5.58	3.60
0.917	5.40	2.500	10.80	4.083	9.00	5.67	3.60
1.000	5.40	2.583	10.80	4.167	9.00	5.75	3.60
1.083	5.40	2.667	10.80	4.250	9.00	5.83	3.60
1.167	5.40	2.750	10.80	4.333	7.20	5.92	3.60
1.250	5.40	2.833	53.90	4.417	7.20	6.00	3.60
1.333	5.40	2.917	53.90	4.500	7.20	6.08	3.60
1.417	5.40	3.000	53.90	4.583	7.20	6.17	3.60
1.500	5.40	3.083	140.20	4.667	7.20	6.25	3.60
1.583	5.40	3.167	140.20	4.750	7.20		

Max.Eff.Inten.(mm/hr)= 140.20
 over (min) 5.00
 Storage Coeff. (min)= 2.96 (ii) 7.77 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.13

TOTALS

PEAK FLOW (cms)= 0.97 0.33 1.298 (iii)
 TIME TO PEAK (hrs)= 3.25 3.25 3.25
 RUNOFF VOLUME (mm)= 88.92 58.68 78.34
 TOTAL RAINFALL (mm)= 89.93 89.93 89.93
 RUNOFF COEFFICIENT = 0.99 0.65 0.87

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 85.0 Ia = Dep. 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(0016)		OVERFLOW IS OFF			
IN= 2---> OUT= 1					
DT= 5.0 min					
		OUTFLOW	STORAGE	OUTFLOW	STORAGE
		(cms)	(ha.m.)	(cms)	(ha.m.)
		0.0000	0.0000	0.1302	0.1016
		0.0663	0.0485	0.1858	0.1828
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0015)		3.845	1.298	3.25	78.34
OUTFLOW: ID= 1 (0016)		3.845	0.184	3.75	78.29

PEAK FLOW REDUCTION [qout/qin](%)= 14.16
 TIME SHIFT OF PEAK FLOW (min)= 30.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1803

ADD HYD (0017)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0014):	9.62	0.677	3.50	32.53	
+ ID2= 2 (0016):	3.85	0.184	3.75	78.29	
=====					
ID = 3 (0017):	13.47	0.858	3.50	45.60	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====													
(v 6.2.2008)													
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							
=====													
O	O	T	T	H	H	Y	Y	M	M	O	O	TM	
O	O	T	T	H	H	Y	Y	M	M	O	O		
O	O	T	T	H	H	Y	Y	M	M	O	O		
O	O	T	T	H	H	Y	Y	M	M	O	O		

Developed and Distributed by Smart City Water Inc
 Copyright 2007 - 2021 Smart City Water Inc
 All rights reserved.

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat
Output filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\9e7b
Summary filename: C:\Users\matthew.holmes\AppData\Local\Civica\vh5\2d72d463-88b2-4899-a37e-038f85e29de8\9e7b

DATE: 05/31/2022 TIME: 03:59:32

USER:

COMMENTS: _____

** SIMULATION : Run 04 **

Cavan 10 Year Storm

CHICAGO STORM
Ptotal= 53.50 mm

IDF curve parameters: A=1560.000
B= 13.000
C= 0.860

used in: INTENSITY = A / (t + B)^{AC}

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.91	1.00	33.34	2.00	8.57	3.00	3.62
0.17	3.45	1.17	105.21	2.17	7.00	3.17	3.30
0.33	4.24	1.33	43.73	2.33	5.91	3.33	3.03
0.50	5.50	1.50	22.99	2.50	5.10	3.50	2.80
0.67	7.78	1.67	15.02	2.67	4.49	3.67	2.61
0.83	12.98	1.83	10.97	2.83	4.01	3.83	2.44

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 9.46
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 6.15 3.31
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 251.17 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 4.35 17.63 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.23 0.06

TOTALS
PEAK FLOW (cms)= 1.67 0.11 1.710 (iii)
TIME TO PEAK (hrs)= 1.33 1.67
RUNOFF VOLUME (mm)= 52.50 14.32 39.14
TOTAL RAINFALL (mm)= 53.50 53.50 53.50

RUNOFF COEFFICIENT = 0.98 0.27 0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 2.29
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.49 0.80
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 123.65 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.84 16.12 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.06

TOTALS
PEAK FLOW (cms)= 0.43 0.03 0.437 (iii)
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 0.84
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.55 0.29
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.92 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30

0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min) 5.00 20.00
Storage Coeff. (min)= 2.11 (ii) 15.39 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.07

TOTALS
PEAK FLOW (cms)= 0.16 0.01 0.163 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area	(ha)=	0.63
STANDHYD (0006)	Total	Imp(%)=	65.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	65.00

Surface Area	(ha)=	0.41	0.22
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	64.67	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min) 5.00 20.00
Storage Coeff. (min)= 1.93 (ii) 15.21 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.07

TOTALS
PEAK FLOW (cms)= 0.12 0.01 0.122 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area	(ha)=	2.08
STANDHYD (0007)	Total	Imp(%)=	65.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	65.00

Surface Area	(ha)=	1.35	0.73
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	117.83	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min) 5.00 20.00
Storage Coeff. (min)= 2.76 (ii) 16.04 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.06

TOTALS
PEAK FLOW (cms)= 0.39 0.03 0.397 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 52.50 14.32 39.13
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27 0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area	(ha)=	3.41
STANDHYD (0008)	Total	Imp(%)=	65.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	65.00

Surface Area	(ha)=	2.21	1.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	150.68	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min) 5.00 20.00

Storage Coeff. (min)= 3.20 (ii) 16.48 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.27 0.06

PEAK FLOW (cms)= 0.63 0.04
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 52.50 14.32
TOTAL RAINFALL (mm)= 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27

TOTALS
0.642 (iii)
0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. 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 (0009)
ID= 1 DT= 5.0 min
Area (ha)= 0.56
Total Imp(%)= 65.00
Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.36 0.19
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 60.89 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.91 1.083 33.34 2.083 8.57 3.08 3.62
0.167 2.91 1.167 33.34 2.167 8.57 3.17 3.62
0.250 3.45 1.250 105.21 2.250 7.00 3.25 3.30
0.333 3.45 1.333 105.21 2.333 7.00 3.33 3.30
0.417 4.24 1.417 43.73 2.417 5.91 3.42 3.03
0.500 4.24 1.500 43.73 2.500 5.91 3.50 3.03
0.583 5.50 1.583 22.99 2.583 5.10 3.58 2.80
0.667 5.50 1.667 22.99 2.667 5.10 3.67 2.80
0.750 7.78 1.750 15.02 2.750 4.49 3.75 2.61
0.833 7.78 1.833 15.02 2.833 4.49 3.83 2.61
0.917 12.98 1.917 10.97 2.917 4.01 3.92 2.44
1.000 12.98 2.000 10.97 3.000 4.01 4.00 2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 1.86 (ii) 15.14 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.32 0.07

PEAK FLOW (cms)= 0.11 0.01
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 52.50 14.32
TOTAL RAINFALL (mm)= 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27

TOTALS
0.108 (iii)
0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0001)
ID= 1 DT= 5.0 min
Area (ha)= 0.83
Total Imp(%)= 20.00
Dir. Conn.(%)= 20.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.17 0.66
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 74.31 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.91 1.083 33.34 2.083 8.57 3.08 3.62
0.167 2.91 1.167 33.34 2.167 8.57 3.17 3.62
0.250 3.45 1.250 105.21 2.250 7.00 3.25 3.30
0.333 3.45 1.333 105.21 2.333 7.00 3.33 3.30
0.417 4.24 1.417 43.73 2.417 5.91 3.42 3.03
0.500 4.24 1.500 43.73 2.500 5.91 3.50 3.03
0.583 5.50 1.583 22.99 2.583 5.10 3.58 2.80
0.667 5.50 1.667 22.99 2.667 5.10 3.67 2.80
0.750 7.78 1.750 15.02 2.750 4.49 3.75 2.61
0.833 7.78 1.833 15.02 2.833 4.49 3.83 2.61
0.917 12.98 1.917 10.97 2.917 4.01 3.92 2.44
1.000 12.98 2.000 10.97 3.000 4.01 4.00 2.44

Max.Eff.Inten.(mm/hr)= 105.21 20.59
over (min)= 5.00 20.00
Storage Coeff. (min)= 2.09 (ii) 15.37 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.31 0.07

PEAK FLOW (cms)= 0.05 0.02
TIME TO PEAK (hrs)= 1.33 1.58
RUNOFF VOLUME (mm)= 52.50 14.32
TOTAL RAINFALL (mm)= 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.27

TOTALS
0.057 (iii)
0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(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 (0001): 0.83 0.057 1.33 21.95
+ ID2= 2 (0002): 9.46 1.710 1.33 39.14
ID = 3 (0004): 10.29 1.766 1.33 37.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0004): 10.29 1.766 1.33 37.75
+ ID2= 2 (0003): 2.29 0.437 1.33 39.13
ID = 1 (0004): 12.58 2.203 1.33 38.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (0004): 12.58 2.203 1.33 38.01
+ ID2= 2 (0005): 0.84 0.163 1.33 39.13
ID = 3 (0004): 13.43 2.366 1.33 38.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0004): 13.43 2.366 1.33 38.08
+ ID2= 2 (0006): 0.63 0.122 1.33 39.13

=====

ID = 1 (0004):	14.05	2.487	1.33	38.12
-----------------	-------	-------	------	-------

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0004):	14.05	2.487	1.33	38.12
+ ID2= 2 (0007):	2.08	0.397	1.33	39.13
=====				
ID = 3 (0004):	16.14	2.884	1.33	38.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0004):	16.14	2.884	1.33	38.25
+ ID2= 2 (0008):	3.41	0.642	1.33	39.14
=====				
ID = 1 (0004):	19.54	3.526	1.33	38.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0004)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0004):	19.54	3.526	1.33	38.41
+ ID2= 2 (0009):	0.56	0.108	1.33	39.12
=====				
ID = 3 (0004):	20.10	3.634	1.33	38.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 1.59			
STANDHYD (0019)		Total Imp(%)= 65.00		Dir. Conn.(%)= 65.00	
ID= 1 DT= 5.0 min					

		IMPERVIOUS		PERVIOUS (i)	
Surface Area	(ha)=	1.03		0.56	
Dep. Storage	(mm)=	1.00		1.50	
Average Slope	(%)=	1.00		2.00	
Length	(m)=	102.95		40.00	
Mannings n	=	0.013		0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)=	105.21	20.59
over (min)	5.00	20.00
Storage Coeff. (min)=	2.55 (ii)	15.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. Tpeak (cms)=	0.29	0.07

PEAK FLOW (cms)=	0.30	0.02	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.58	0.305 (iii)
RUNOFF VOLUME (mm)=	52.50	14.32	39.13
TOTAL RAINFALL (mm)=	53.50	53.50	53.50
RUNOFF COEFFICIENT =	0.98	0.27	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 65.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0012)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):	1.59	0.305	1.33	39.13
+ ID2= 2 (0004):	20.10	3.634	1.33	38.43
=====				
ID = 3 (0012):	21.69	3.939	1.33	38.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)		OVERFLOW IS OFF	
IN= 2---> OUT= 1			
DT= 5.0 min			

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.7662	0.9802
0.0547	0.1537	0.8763	1.2181
0.1004	0.3323	0.9740	1.4667
0.4710	0.5374	1.0626	1.7264
0.4710	0.5374	1.1285	1.9424
0.6367	0.7532	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0012)	21.688	3.939	1.33	38.48
OUTFLOW: ID= 1 (0011)	21.688	0.484	2.17	38.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.29
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.5544

CALIB		Area (ha)= 7.35		Curve Number (CN)= 65.0	
NASHYD (0013)		Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 0.18			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 1.585

PEAK FLOW (cms)= 0.281 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 12.658
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		Area (ha)= 9.62		Curve Number (CN)= 65.0	
NASHYD (0014)		Ia (mm)= 5.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 0.38			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Unit Hyd Qpeak (cms)= 0.957

PEAK FLOW (cms)= 0.246 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 12.694
TOTAL RAINFALL (mm)= 53.500
RUNOFF COEFFICIENT = 0.237

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0015)
ID= 1 DT= 5.0 min

Area (ha)= 3.85
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.50 1.35
Dep. Storage (mm)= 1.00 1.50
Average Slope (%)= 1.00 2.00
Length (m)= 160.10 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.91	1.083	33.34	2.083	8.57	3.08	3.62
0.167	2.91	1.167	33.34	2.167	8.57	3.17	3.62
0.250	3.45	1.250	105.21	2.250	7.00	3.25	3.30
0.333	3.45	1.333	105.21	2.333	7.00	3.33	3.30
0.417	4.24	1.417	43.73	2.417	5.91	3.42	3.03
0.500	4.24	1.500	43.73	2.500	5.91	3.50	3.03
0.583	5.50	1.583	22.99	2.583	5.10	3.58	2.80
0.667	5.50	1.667	22.99	2.667	5.10	3.67	2.80
0.750	7.78	1.750	15.02	2.750	4.49	3.75	2.61
0.833	7.78	1.833	15.02	2.833	4.49	3.83	2.61
0.917	12.98	1.917	10.97	2.917	4.01	3.92	2.44
1.000	12.98	2.000	10.97	3.000	4.01	4.00	2.44

Max.Eff.Inten.(mm/hr)= 105.21 52.26
over (min)= 5.00 15.00
Storage Coeff. (min)= 3.32 (ii) 12.47 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.26 0.08

TOTALS
PEAK FLOW (cms)= 0.71 0.12 0.767 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 52.50 27.93 43.90
TOTAL RAINFALL (mm)= 53.50 53.50 53.50
RUNOFF COEFFICIENT = 0.98 0.52 0.82

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. 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(0016)
IN= 2--> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1302	0.1016
0.0663	0.0485	0.1858	0.1828

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)

INFLOW : ID= 2 (0015) 3.845 0.767 1.33 43.90
OUTFLOW: ID= 1 (0016) 3.845 0.127 2.00 43.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.54
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 0.0989

ADD HYD (0017)
1 + 2 = 3

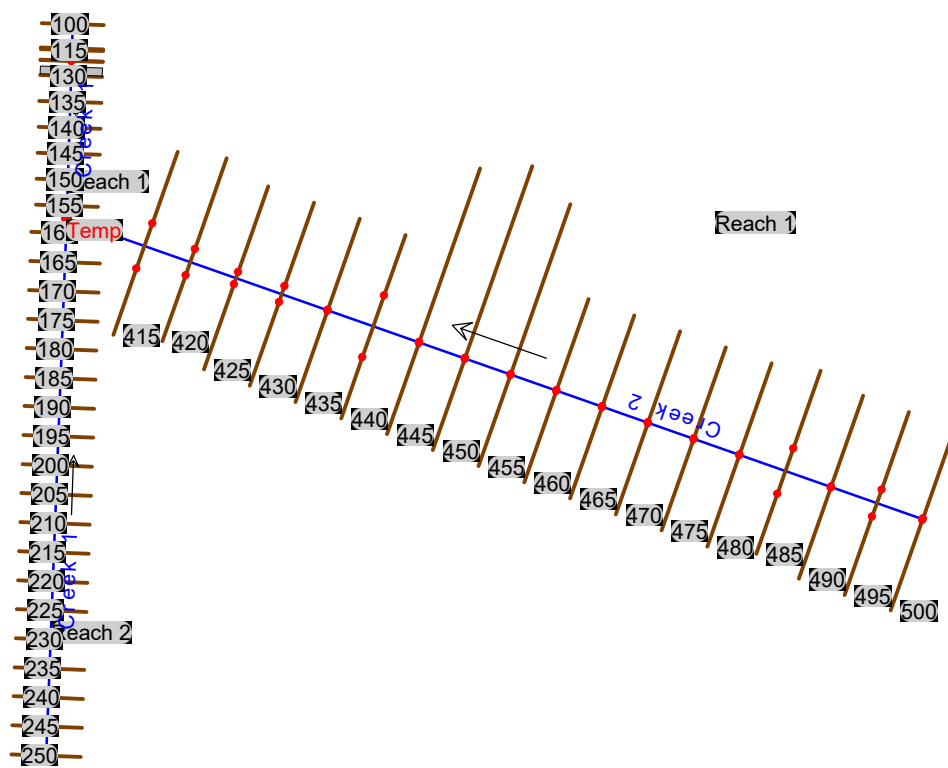
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014): 9.62	0.246	1.83	12.69
+ ID2= 2 (0016): 3.85	0.127	2.00	43.85
ID = 3 (0017): 13.47	0.371	1.83	21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SCHEDULE 4

- HEC-RAS AND OUTPUT FILES

Creek 1 & 2 Schematic



Some schematic data outside default extents (see View/Set Schematic Plot Extents...)

None of the XS's are Geo-Referenced (Geo-Ref user entered XS) (Geo-Ref interpolated XS) (Non Geo-Ref user entered XS) (Non Geo-Ref interpolated XS)

Enter/Edit Number of Profiles (25000 max):

1

Reach Boundary Conditions ...

Apply Data

Locations of Flow Data Changes

River:

Creek 2

Add Multiple...

Reach:

Reach 1

River Sta.:

500

Add A Flow Change Location

Flow Change Location

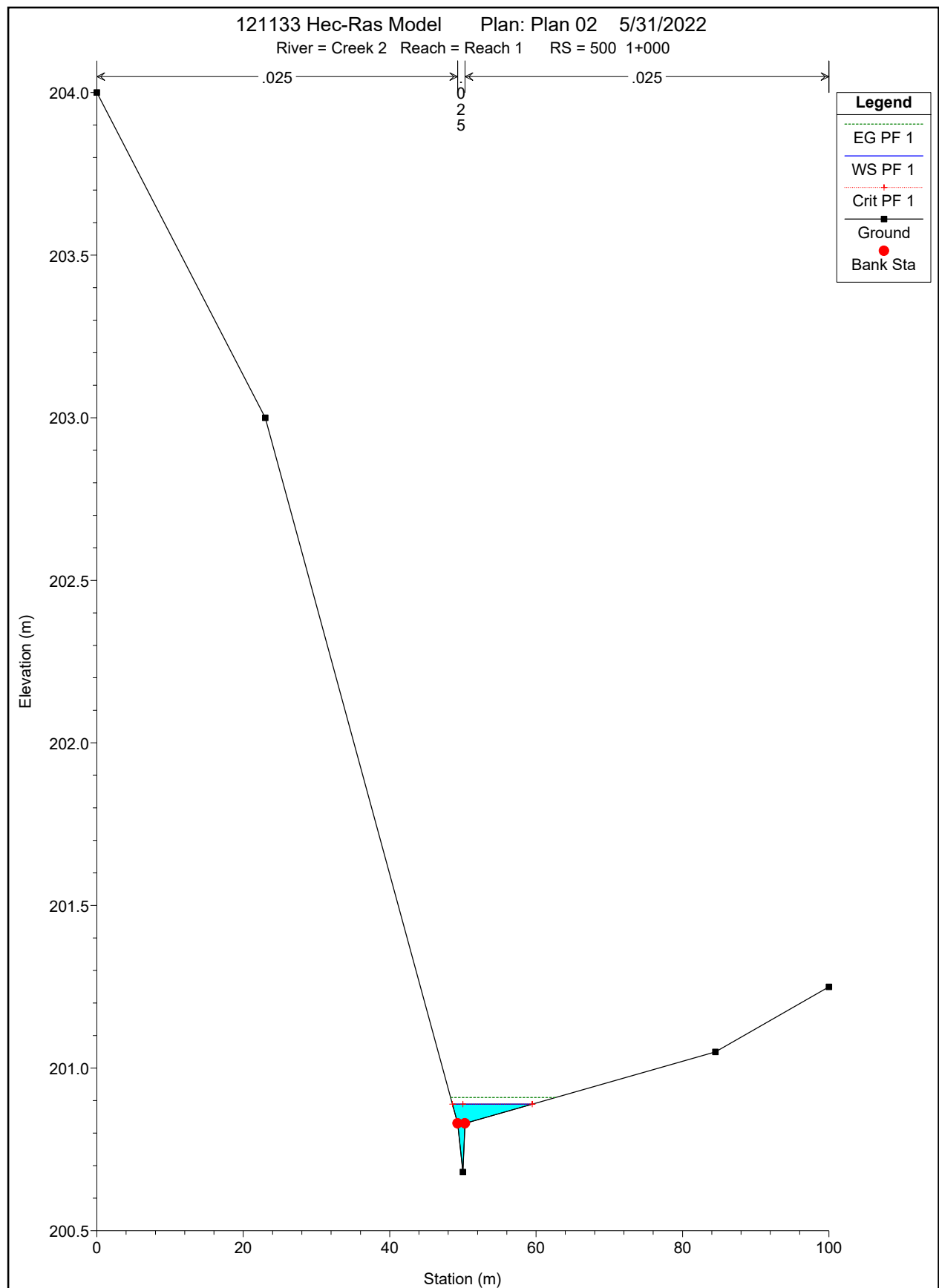
Profile Names and Flow Rates

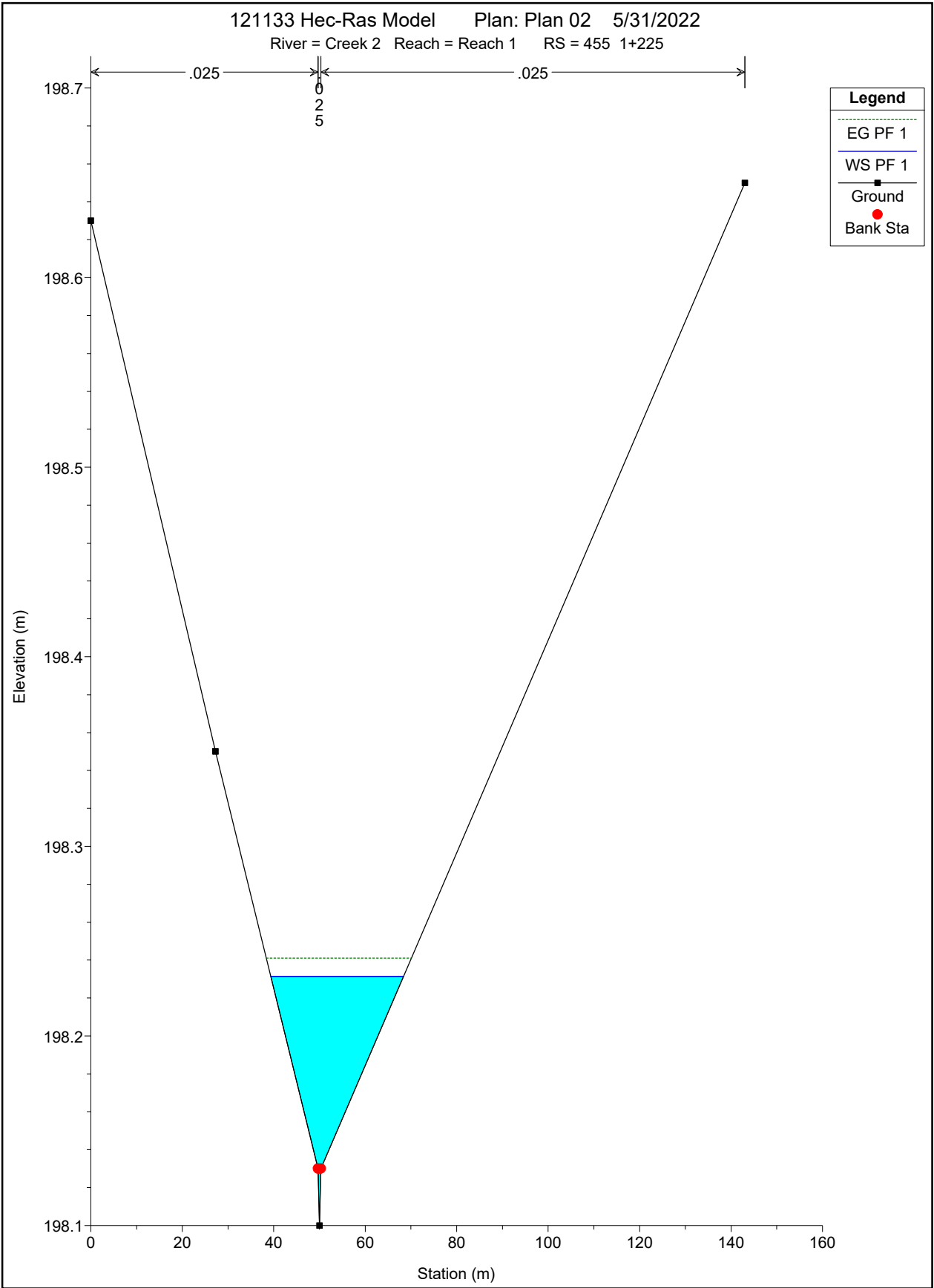
	River	Reach	RS	PF 1
1	Creek 1	Reach 2	250	0.566
2	Creek 1	Reach 2	190	0.994
3	Creek 1	Reach 1	155	1.311
4	Creek 1	Reach 1	135	3.85
5	Creek 1	Reach 1	100	3.85
6	Creek 2	Reach 1	500	0.199
7	Creek 2	Reach 1	470	0.633
8	Creek 2	Reach 1	440	1.236
9	Creek 2	Reach 1	415	1.751

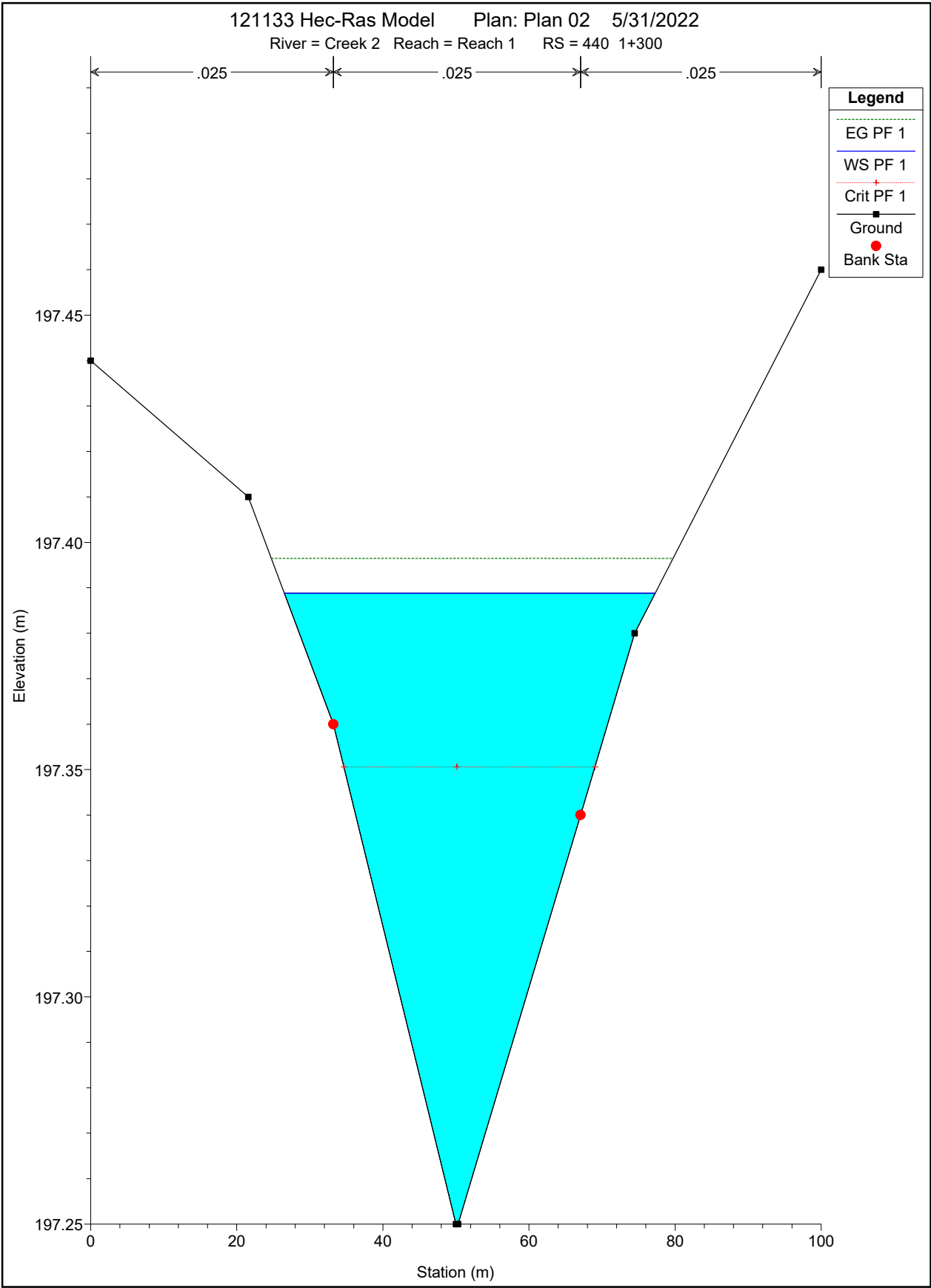
Creek 1 & 2 Output Table

HEC-RAS Plan: Plan 02 Profile: PF 1

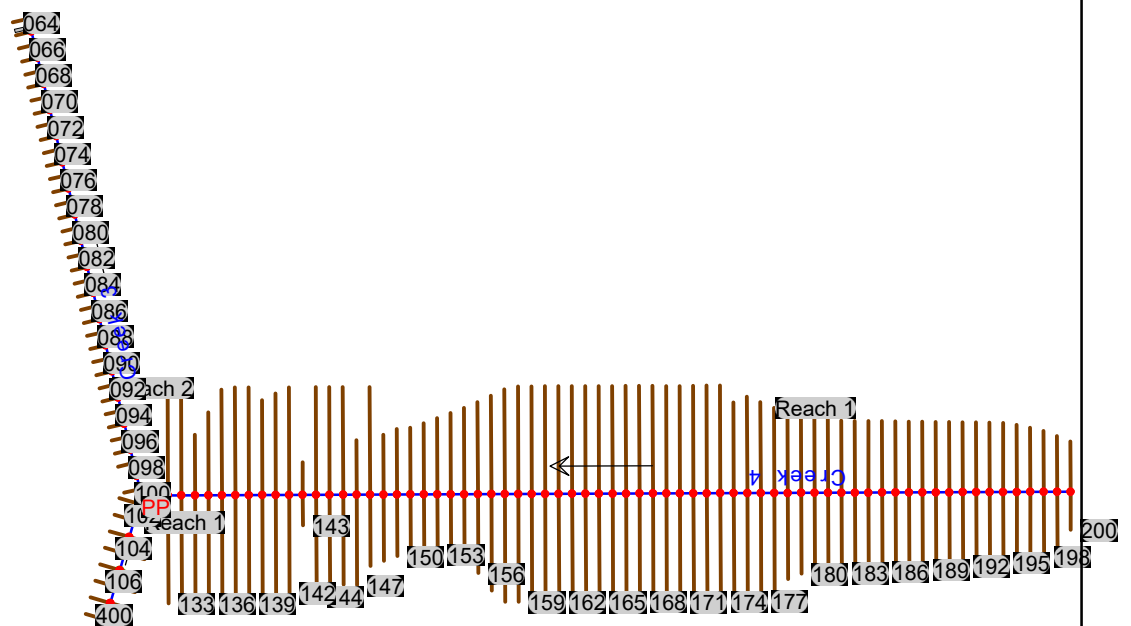
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Creek 2	Reach 1	500	PF 1	0.20	200.68	200.89	200.89	200.91	0.006490	0.82	0.43	10.88	0.71
Creek 2	Reach 1	495	PF 1	0.20	200.25	200.34		200.34	0.003334	0.30	0.66	14.28	0.44
Creek 2	Reach 1	490	PF 1	0.20	200.00	200.20	200.20	200.22	0.008332	0.86	0.49	16.71	0.77
Creek 2	Reach 1	485	PF 1	0.20	199.50	199.60		199.60	0.005311	0.39	0.51	10.62	0.56
Creek 2	Reach 1	480	PF 1	0.20	199.20	199.43	199.43	199.45	0.006986	0.90	0.38	7.78	0.73
Creek 2	Reach 1	475	PF 1	0.20	199.00	199.23	199.23	199.25	0.006723	0.89	0.39	7.64	0.71
Creek 2	Reach 1	470	PF 1	0.63	198.72	198.98	198.98	199.01	0.008680	1.12	1.05	17.61	0.83
Creek 2	Reach 1	465	PF 1	0.63	198.42	198.67	198.67	198.70	0.009354	1.13	1.07	19.45	0.86
Creek 2	Reach 1	460	PF 1	0.63	198.17	198.32		198.32	0.002094	0.44	2.29	39.45	0.41
Creek 2	Reach 1	455	PF 1	0.63	198.10	198.23		198.24	0.005497	0.70	1.51	28.99	0.66
Creek 2	Reach 1	450	PF 1	0.63	197.95	198.01	198.01	198.02	0.015986	0.72	1.44	56.92	0.99
Creek 2	Reach 1	445	PF 1	0.63	197.38	197.48	197.47	197.49	0.011617	0.76	1.49	49.25	0.88
Creek 2	Reach 1	440	PF 1	1.24	197.25	197.39	197.35	197.40	0.002441	0.39	3.34	50.74	0.42
Creek 2	Reach 1	435	PF 1	1.24	197.14	197.24	197.24	197.26	0.019585	1.07	1.99	55.08	1.18
Creek 2	Reach 1	430	PF 1	1.24	196.98	197.11	197.06	197.11	0.001699	0.41	4.15	58.34	0.37
Creek 2	Reach 1	425	PF 1	1.24	196.95	197.03		197.04	0.006305	0.55	2.79	56.15	0.65
Creek 2	Reach 1	420	PF 1	1.24	196.82	197.00		197.00	0.000641	0.28	6.08	76.99	0.23
Creek 2	Reach 1	415	PF 1	1.75	196.77	196.91	196.91	196.94	0.011738	0.83	2.33	34.95	0.92
Creek 1	Reach 2	250	PF 1	0.57	199.00	199.16	199.15	199.16	0.004799	0.61	1.95	60.00	0.59
Creek 1	Reach 2	245	PF 1	0.57	198.87	199.01	199.01	199.02	0.007107	0.66	1.74	60.00	0.70
Creek 1	Reach 2	240	PF 1	0.57	198.75	198.87	198.85	198.87	0.003789	0.44	2.12	60.00	0.50
Creek 1	Reach 2	235	PF 1	0.57	198.62	198.77		198.78	0.003479	0.57	1.75	35.66	0.52
Creek 1	Reach 2	230	PF 1	0.57	198.49	198.62	198.62	198.64	0.009871	0.88	1.02	20.44	0.86
Creek 1	Reach 2	225	PF 1	0.57	198.37	198.49	198.47	198.50	0.003510	0.51	1.72	33.75	0.51
Creek 1	Reach 2	220	PF 1	0.57	198.25	198.31	198.31	198.32	0.018507	0.73	1.04	33.41	1.05
Creek 1	Reach 2	215	PF 1	0.57	198.12	198.26		198.26	0.000283	0.17	3.83	37.25	0.15
Creek 1	Reach 2	210	PF 1	0.57	198.01	198.23	198.21	198.24	0.003241	0.71	1.39	19.39	0.53
Creek 1	Reach 2	205	PF 1	0.57	197.93	198.07	198.07	198.09	0.014431	1.06	1.01	26.71	1.04
Creek 1	Reach 2	200	PF 1	0.57	197.70	197.85	197.83	197.86	0.006307	0.74	1.17	20.82	0.69
Creek 1	Reach 2	195	PF 1	0.57	197.50	197.72		197.73	0.004754	0.80	1.28	21.22	0.63
Creek 1	Reach 2	190	PF 1	0.99	196.93	197.49	197.49	197.54	0.010184	1.39	1.25	15.87	0.75
Creek 1	Reach 2	185	PF 1	0.99	196.85	197.19		197.20	0.001844	0.72	2.29	18.77	0.43
Creek 1	Reach 2	180	PF 1	0.99	196.80	197.17		197.18	0.000416	0.38	4.26	28.43	0.21
Creek 1	Reach 2	175	PF 1	0.99	196.80	197.16		197.17	0.000366	0.35	4.59	31.01	0.20
Creek 1	Reach 2	170	PF 1	0.99	196.90	197.14		197.15	0.002047	0.63	2.63	28.18	0.44
Creek 1	Reach 2	165	PF 1	0.99	196.81	197.01	197.01	197.03	0.014994	1.29	1.50	31.71	1.09
Creek 1	Reach 2	160	PF 1	0.99	196.60	196.91		196.91	0.000521	0.36	4.68	42.60	0.23
Creek 1	Reach 1	155	PF 1	1.31	196.35	196.90		196.90	0.000119	0.27	8.74	45.05	0.12
Creek 1	Reach 1	150	PF 1	1.31	196.27	196.90		196.90	0.000061	0.21	11.57	53.98	0.09
Creek 1	Reach 1	145	PF 1	1.31	196.19	196.90		196.90	0.000012	0.10	19.78	59.83	0.04
Creek 1	Reach 1	140	PF 1	1.31	196.12	196.90		196.90	0.000005	0.07	26.28	60.00	0.02
Creek 1	Reach 1	135	PF 1	3.85	196.04	196.90		196.90	0.000021	0.15	31.96	60.00	0.05
Creek 1	Reach 1	130	PF 1	3.85	196.21	196.90	196.57	196.90	0.000178	0.38	16.67	59.38	0.15
Creek 1	Reach 1	125.6		Culvert									
Creek 1	Reach 1	125	PF 1	3.85	196.28	196.86		196.87	0.000906	0.76	9.63	52.33	0.33
Creek 1	Reach 1	120	PF 1	3.85	196.26	196.86		196.87	0.000659	0.68	9.48	39.55	0.29
Creek 1	Reach 1	115	PF 1	3.85	196.26	196.74	196.74	196.84	0.008612	2.10	2.86	13.54	1.01
Creek 1	Reach 1	110	PF 1	3.85	196.25	196.46	196.46	196.54	0.011597	1.06	3.08	19.64	0.88
Creek 1	Reach 1	105	PF 1	3.85	196.21	196.43	196.41	196.45	0.007633	1.06	5.40	60.00	0.81
Creek 1	Reach 1	100	PF 1	3.85	196.00	196.35	196.29	196.37	0.002033	0.79	7.93	57.53	0.46







Creek 3 & 4 Schematic



None of the XS's are Geo-Referenced (Geo-Ref user entered XS) (Geo-Ref interpolated XS) (Non Geo-Ref user entered XS) (Non Geo-Ref interpolated XS)

Enter/Edit Number of Profiles (25000 max):

Reach Boundary Conditions ...

Apply Data

Locations of Flow Data Changes

River:

Creek 4

Add Multiple...

Reach:

Reach 1

River Sta.:

200

Add A Flow Change Location

Flow Change Location				Profile Names and Flow Rates
	River	Reach	RS	PF 1
1	Creek 3	Reach 1	400	12.234
2	Creek 3	Reach 2	100	14.235
3	Creek 3	Reach 2	092	14.294
4	Creek 3	Reach 2	084	14.45
5	Creek 3	Reach 2	076	14.64
6	Creek 3	Reach 2	068	14.861
7	Creek 3	Reach 2	064	15.006
8	Creek 4	Reach 1	200	0.457
9	Creek 4	Reach 1	184	1.512
10	Creek 4	Reach 1	168	2.428
11	Creek 4	Reach 1	152	3.482
12	Creek 4	Reach 1	148	4.013
13	Creek 4	Reach 1	142	4.391
14	Creek 4	Reach 1	133	5.08

Creek 3 & 4 Output Table

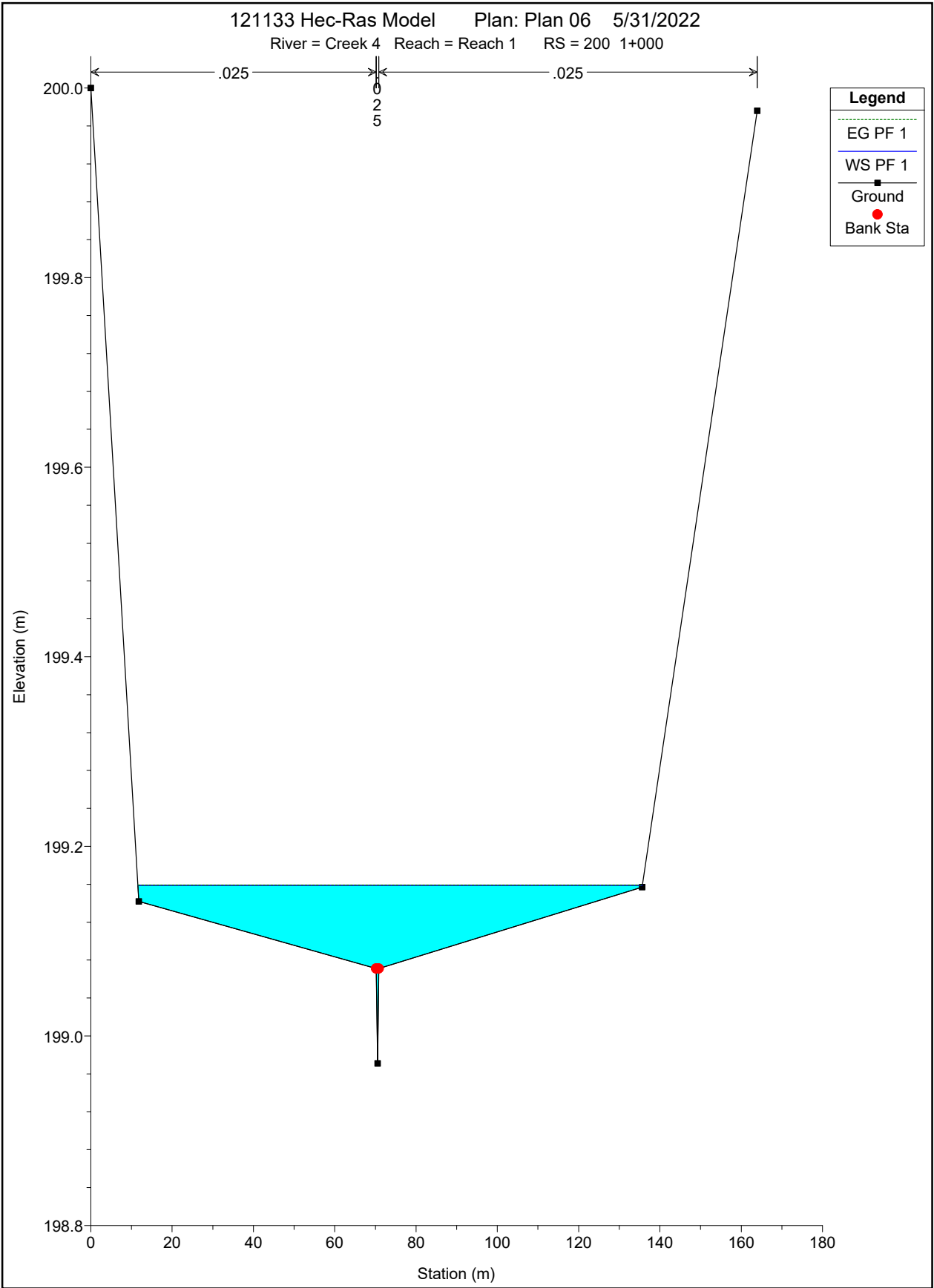
HEC-RAS Plan: Plan 06 Profile: PF 1

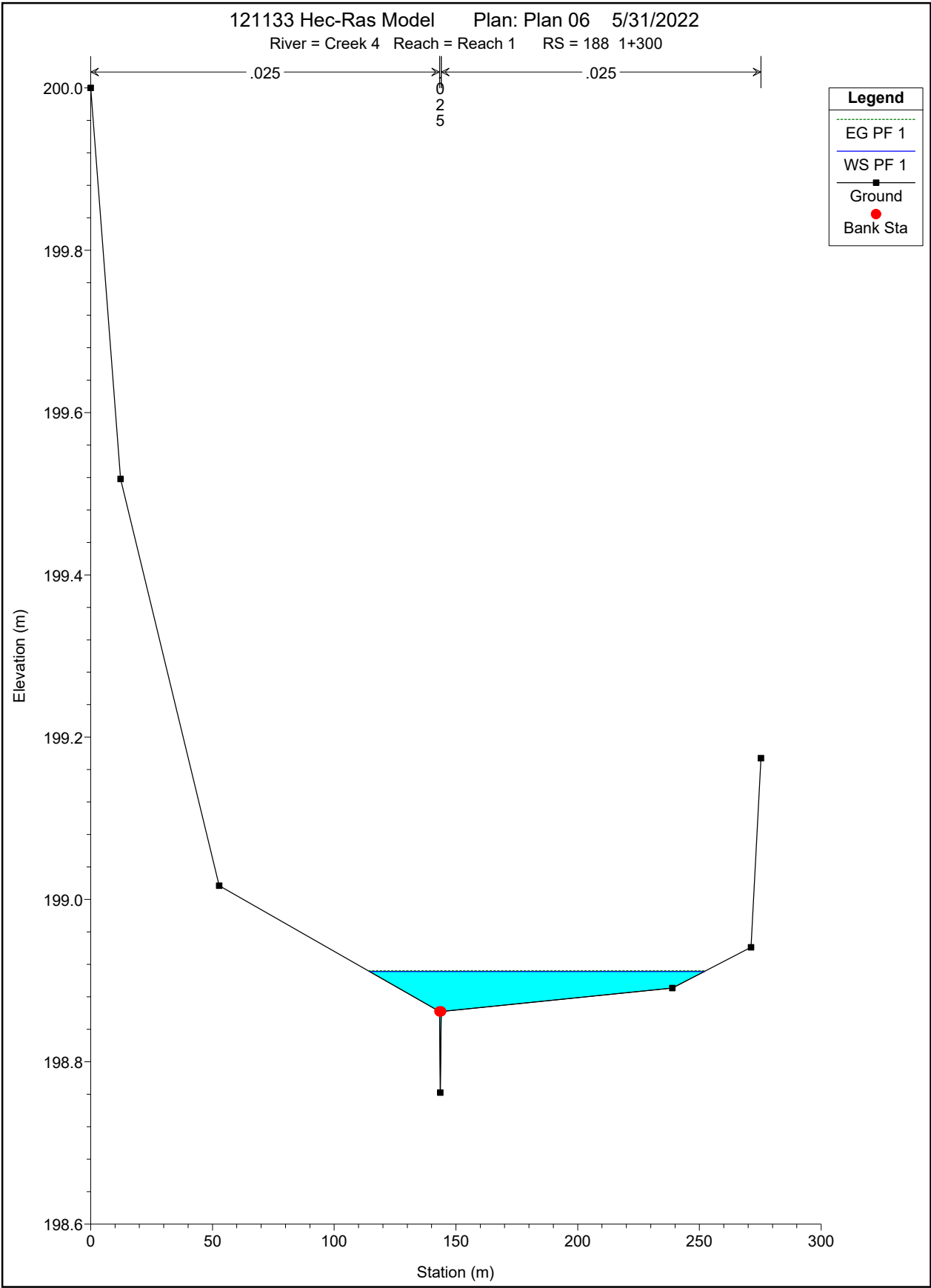
River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Creek 4	Reach 1	200	PF 1	0.46	198.97	199.16		199.16	0.000195	0.14	6.06	124.07	0.12
Creek 4	Reach 1	199	PF 1	0.46	198.95	199.15		199.15	0.000606	0.27	3.40	68.90	0.22
Creek 4	Reach 1	198	PF 1	0.46	198.94	199.13		199.13	0.001167	0.36	2.19	38.02	0.30
Creek 4	Reach 1	197	PF 1	0.46	198.92	199.11		199.11	0.000642	0.26	3.29	66.57	0.22
Creek 4	Reach 1	196	PF 1	0.46	198.90	199.05	199.05	199.07	0.010647	0.88	1.13	39.48	0.87
Creek 4	Reach 1	195	PF 1	0.46	198.88	199.04		199.04	0.000365	0.16	5.15	134.58	0.16
Creek 4	Reach 1	194	PF 1	0.46	198.87	199.02		199.02	0.000763	0.24	3.48	89.36	0.23
Creek 4	Reach 1	193	PF 1	0.46	198.85	199.00		199.00	0.000773	0.24	3.49	90.43	0.24
Creek 4	Reach 1	192	PF 1	0.46	198.83	198.98		198.99	0.000737	0.23	3.78	105.72	0.23
Creek 4	Reach 1	191	PF 1	0.46	198.81	198.97		198.97	0.000774	0.23	3.73	106.01	0.23
Creek 4	Reach 1	190	PF 1	0.46	198.80	198.95		198.95	0.000734	0.23	3.88	112.12	0.23
Creek 4	Reach 1	189	PF 1	0.46	198.78	198.93		198.93	0.000792	0.23	3.94	122.18	0.24
Creek 4	Reach 1	188	PF 1	0.46	198.76	198.91		198.91	0.000740	0.23	4.22	137.59	0.23
Creek 4	Reach 1	187	PF 1	0.46	198.75	198.89		198.89	0.000821	0.24	4.05	133.73	0.24
Creek 4	Reach 1	186	PF 1	0.46	198.71	198.89		198.89	0.000072	0.08	9.21	169.80	0.07
Creek 4	Reach 1	185	PF 1	0.46	198.71	198.89		198.89	0.000081	0.09	8.89	168.52	0.08
Creek 4	Reach 1	184	PF 1	1.51	198.69	198.88		198.88	0.000495	0.23	10.80	178.30	0.20
Creek 4	Reach 1	183	PF 1	1.51	198.68	198.87		198.87	0.000444	0.22	11.13	176.23	0.19
Creek 4	Reach 1	182	PF 1	1.51	198.66	198.85		198.85	0.000942	0.33	8.80	169.66	0.27
Creek 4	Reach 1	181	PF 1	1.51	198.64	198.83		198.83	0.000714	0.28	9.17	155.68	0.24
Creek 4	Reach 1	180	PF 1	1.51	198.62	198.82		198.82	0.000522	0.25	9.83	144.75	0.20
Creek 4	Reach 1	179	PF 1	1.51	198.60	198.80		198.81	0.000457	0.24	10.17	142.70	0.19
Creek 4	Reach 1	178	PF 1	1.51	198.58	198.79		198.80	0.000372	0.22	10.75	140.40	0.18
Creek 4	Reach 1	177	PF 1	1.51	198.56	198.78		198.78	0.000642	0.30	8.99	135.03	0.23
Creek 4	Reach 1	176	PF 1	1.51	198.54	198.77		198.77	0.000491	0.27	11.56	206.30	0.20
Creek 4	Reach 1	175	PF 1	1.51	198.52	198.76		198.76	0.000537	0.29	8.76	110.52	0.21
Creek 4	Reach 1	174	PF 1	1.51	198.50	198.74		198.74	0.000597	0.31	8.20	101.51	0.23
Creek 4	Reach 1	173	PF 1	1.51	198.48	198.72		198.73	0.000864	0.37	7.33	103.28	0.27
Creek 4	Reach 1	172	PF 1	1.51	198.47	198.71		198.71	0.000661	0.33	8.50	119.33	0.24
Creek 4	Reach 1	171	PF 1	1.51	198.45	198.69		198.69	0.000433	0.27	10.28	139.50	0.20
Creek 4	Reach 1	170	PF 1	1.51	198.43	198.68		198.68	0.000325	0.24	11.36	144.17	0.17
Creek 4	Reach 1	169	PF 1	1.51	198.41	198.68		198.68	0.000204	0.20	13.57	158.67	0.14
Creek 4	Reach 1	168	PF 1	2.43	198.39	198.67		198.67	0.000384	0.28	15.23	166.95	0.19
Creek 4	Reach 1	167	PF 1	2.43	198.37	198.66		198.66	0.000292	0.26	16.93	177.11	0.17
Creek 4	Reach 1	166	PF 1	2.43	198.35	198.65		198.66	0.000299	0.26	16.17	160.18	0.16
Creek 4	Reach 1	165	PF 1	2.43	198.33	198.65		198.65	0.000360	0.30	14.70	146.00	0.19
Creek 4	Reach 1	164	PF 1	2.43	198.31	198.64		198.64	0.000346	0.29	14.02	125.20	0.18
Creek 4	Reach 1	163	PF 1	2.43	198.29	198.63		198.63	0.000395	0.33	12.86	111.77	0.19
Creek 4	Reach 1	162	PF 1	2.43	198.27	198.62		198.62	0.000347	0.31	13.22	108.55	0.18
Creek 4	Reach 1	161	PF 1	2.43	198.27	198.60		198.61	0.000712	0.47	8.43	60.52	0.27
Creek 4	Reach 1	160	PF 1	2.43	198.23	198.59		198.59	0.000387	0.34	12.02	93.08	0.20
Creek 4	Reach 1	159	PF 1	2.43	198.22	198.58		198.58	0.000393	0.35	11.90	91.78	0.20
Creek 4	Reach 1	158	PF 1	2.43	198.20	198.57		198.57	0.000416	0.37	11.40	86.20	0.21
Creek 4	Reach 1	157	PF 1	2.43	198.18	198.56		198.56	0.000690	0.47	8.89	67.83	0.26
Creek 4	Reach 1	156	PF 1	2.43	198.16	198.54		198.55	0.000639	0.46	8.77	61.63	0.25
Creek 4	Reach 1	155	PF 1	2.43	198.14	198.53		198.53	0.000585	0.44	9.08	62.99	0.24
Creek 4	Reach 1	154	PF 1	2.43	198.12	198.51		198.52	0.000540	0.43	9.34	63.66	0.24
Creek 4	Reach 1	153	PF 1	2.43	198.10	198.50		198.50	0.000477	0.41	9.78	65.15	0.22
Creek 4	Reach 1	152	PF 1	3.48	198.08	198.48		198.49	0.001032	0.60	9.60	64.53	0.33
Creek 4	Reach 1	151	PF 1	3.48	198.06	198.45		198.46	0.001255	0.65	8.90	61.90	0.36
Creek 4	Reach 1	150	PF 1	3.48	198.04	198.39		198.41	0.003362	0.98	5.99	48.28	0.57
Creek 4	Reach 1	149	PF 1	3.48	197.99	198.31		198.33	0.002895	0.93	6.15	45.98	0.55
Creek 4	Reach 1	148	PF 1	4.01	197.87	198.21		198.24	0.004405	1.13	5.87	45.35	0.66
Creek 4	Reach 1	147	PF 1	4.01	197.78	198.10		198.13	0.004198	1.11	5.98	45.98	0.66
Creek 4	Reach 1	146	PF 1	4.01	197.63	197.99		198.01	0.005007	1.19	5.53	42.89	0.69
Creek 4	Reach 1	145	PF 1	4.01	197.52	197.88		197.90	0.003991	1.09	6.10	46.38	0.62
Creek 4	Reach 1	144	PF 1	4.01	197.40	197.85		197.86	0.000711	0.55	11.76	65.30	0.28
Creek 4	Reach 1	143	PF 1	4.01	197.28	197.72	197.72	197.81	0.011348	1.67	3.15	19.24	0.85
Creek 4	Reach 1	142	PF 1	4.39	197.17	197.48		197.50	0.003147	0.92	8.20	71.15	0.56
Creek 4	Reach 1	141	PF 1	4.39	197.05	197.32	197.32	197.36	0.010187	1.60	5.31	61.04	1.02
Creek 4	Reach 1	140	PF 1	4.39	196.88	197.28		197.28	0.001276	0.73	12.54	114.20	0.38
Creek 4	Reach 1	139	PF 1	4.39	196.73	197.25		197.25	0.000980	0.72	10.77	60.04	0.34
Creek 4	Reach 1	138	PF 1	4.39	196.87	197.15	197.15	197.19	0.011665	1.53	4.96	54.16	1.01
Creek 4	Reach 1	137	PF 1	4.39	196.52	196.80	196.80	196.85	0.011974	1.54	4.92	53.96	1.03
Creek 4	Reach 1	136	PF 1	4.39	196.09	196.46	196.46	196.50	0.012715	1.57	4.81	53.39	0.96
Creek 4	Reach 1	135	PF 1	4.39	195.79	196.11	196.11	196.15	0.012233	1.55	4.85	53.02	1.00
Creek 4	Reach 1	134	PF 1	4.39	195.53	196.09		196.09	0.000057	0.19	32.08	106.64	0.08
Creek 4	Reach 1	133	PF 1	5.08	195.27	196.09		196.09	0.000011	0.12	63.46	141.53	0.04
Creek 3	Reach 1	400	PF 1	12.23	195.90	196.31		196.33	0.001462	0.75	17.98	60.00	0.40
Creek 3	Reach 1	107	PF 1	12.23	195.83	196.28		196.30	0.000961	0.65	20.40	60.00	0.33
Creek 3	Reach 1	106	PF 1	12.23	195.75	196.27		196.28	0.000617	0.60	23.30	60.00	0.28
Creek 3	Reach 1	105	PF 1	12.23	195.72	196.25		196.27	0.000962	0.73	20.37	60.00	0.34
Creek 3	Reach 1	104	PF 1	12.23	195.63	196.23		196.25	0.000891	0.77	20.82	60.00	0.33
Creek 3	Reach 1	103	PF 1	12.23	195.54	196.17		196.21	0.003123	1.32	14.25	60.00	0.58
Creek 3	Reach 1	102	PF 1	12.23	195.45	196.13		196.16	0.001236	1.01	18.80	60.00	0.40
Creek 3	Reach 1	101	PF 1	12.23	195.35	196.11		196.13	0.000942	0.94	19.48	54.08	0.36
Creek 3	Reach 2	100	PF 1	14.24	195.25	196.00		196.08	0.004389	2.03	12.51	45.59	0.77
Creek 3	Reach 2	099	PF 1	14.24	195.12	195.71	195.71	195.91	0.009015	1.93	7.17	18.29	0.84
Creek 3	Reach 2	098	PF 1	14.24	195.06	195.62		195.65	0.001242	0.87	20.65	60.00	0.39
Creek 3	Reach 2	097	PF 1	14.24	194.97	195.61		195.63	0.000468	0.59	27.73	60.00	0.24
Creek 3	Reach 2	096	PF 1	14.24	195.12	195.56		195.60	0.003159	1.15	15.58	60.00	0.59
Creek 3	Reach 2	095	PF 1	14.24	194.79	195.47		195.52	0.002920	1.54	14.74	49.96	0.62
Creek 3	Reach 2	094	PF 1	14.24	194.70	195.41		195.46	0.002412	1.40	15.37	47.79	0.55

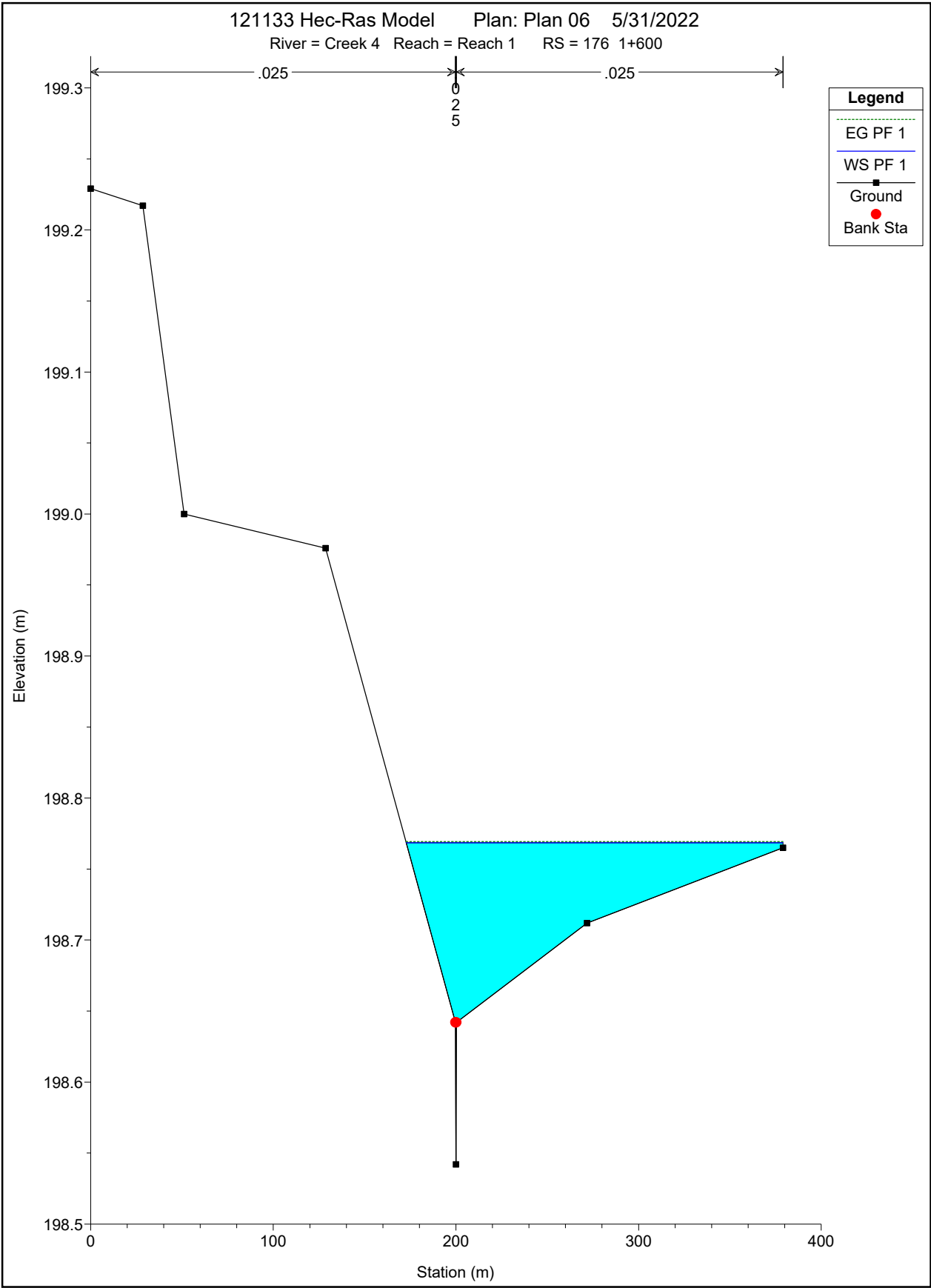
Creek 3 & 4 Output Table

HEC-RAS Plan: Plan 06 Profile: PF 1 (Continued)

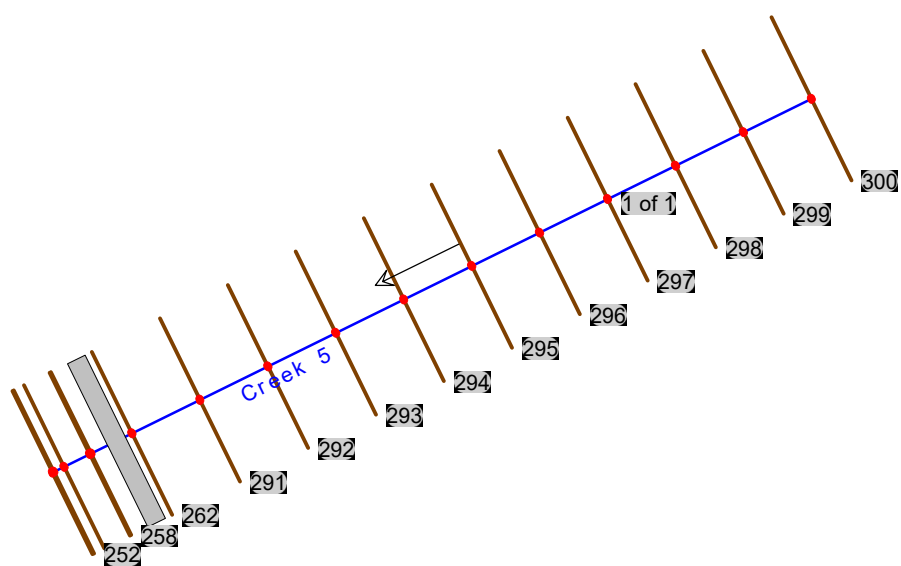
River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Creek 3	Reach 2	093	PF 1	14.24	194.60	195.39		195.41	0.001064	1.01	20.22	51.61	0.38
Creek 3	Reach 2	092	PF 1	14.29	194.51	195.33		195.37	0.002180	1.26	16.04	48.86	0.48
Creek 3	Reach 2	091	PF 1	14.29	194.42	195.25		195.31	0.003194	1.85	13.82	45.71	0.67
Creek 3	Reach 2	090	PF 1	14.29	194.32	195.26		195.27	0.000450	0.75	27.98	60.00	0.26
Creek 3	Reach 2	089	PF 1	14.29	194.23	195.26		195.26	0.000097	0.37	44.66	60.00	0.12
Creek 3	Reach 2	088	PF 1	14.29	193.89	195.26		195.26	0.000059	0.36	51.82	60.00	0.10
Creek 3	Reach 2	087	PF 1	14.29	194.04	195.25		195.26	0.000112	0.45	42.60	60.00	0.13
Creek 3	Reach 2	086	PF 1	14.29	193.98	195.25		195.25	0.000058	0.34	51.67	60.00	0.10
Creek 3	Reach 2	085	PF 1	14.29	193.95	195.25		195.25	0.000048	0.31	55.00	60.00	0.09
Creek 3	Reach 2	084	PF 1	14.45	193.92	195.25		195.25	0.000031	0.25	63.52	60.00	0.07
Creek 3	Reach 2	083	PF 1	14.45	193.95	195.25		195.25	0.000053	0.33	53.11	60.00	0.09
Creek 3	Reach 2	082	PF 1	14.45	193.89	195.25		195.25	0.000051	0.33	53.61	60.00	0.09
Creek 3	Reach 2	081	PF 1	14.45	193.82	195.24		195.25	0.000088	0.34	45.61	60.00	0.10
Creek 3	Reach 2	080	PF 1	14.45	193.79	195.24		195.25	0.000117	0.45	42.20	60.00	0.12
Creek 3	Reach 2	079	PF 1	14.45	193.76	195.24		195.24	0.000139	0.57	40.27	60.00	0.15
Creek 3	Reach 2	078	PF 1	14.45	193.72	195.23		195.24	0.000143	0.57	40.06	60.00	0.15
Creek 3	Reach 2	077	PF 1	14.45	193.69	195.22		195.23	0.000268	0.35	33.23	60.00	0.10
Creek 3	Reach 2	076	PF 1	14.64	193.67	195.21		195.23	0.000515	0.48	27.59	60.00	0.14
Creek 3	Reach 2	075	PF 1	14.64	193.62	195.19		195.21	0.000945	0.52	22.86	60.00	0.16
Creek 3	Reach 2	074	PF 1	14.64	193.59	195.06	195.06	195.15	0.009824	1.46	11.28	60.00	0.49
Creek 3	Reach 2	073	PF 1	14.64	193.56	194.70		194.72	0.000606	1.01	23.93	49.43	0.31
Creek 3	Reach 2	072	PF 1	14.64	193.52	194.69		194.70	0.000389	0.79	27.24	48.80	0.24
Creek 3	Reach 2	071	PF 1	14.64	193.49	194.68		194.69	0.000212	0.61	32.37	47.52	0.18
Creek 3	Reach 2	070	PF 1	14.64	193.45	194.66		194.69	0.000523	0.98	23.03	40.56	0.29
Creek 3	Reach 2	069	PF 1	14.64	193.42	194.66		194.67	0.000241	0.68	32.42	52.44	0.20
Creek 3	Reach 2	068	PF 1	14.86	193.39	194.66		194.67	0.000098	0.44	42.28	52.03	0.13
Creek 3	Reach 2	067	PF 1	14.86	193.33	194.66		194.67	0.000066	0.37	49.34	54.65	0.10
Creek 3	Reach 2	066	PF 1	14.86	193.32	194.66		194.66	0.000039	0.29	60.07	60.00	0.08
Creek 3	Reach 2	065	PF 1	14.86	193.30	194.66	193.79	194.66	0.000037	0.28	60.97	60.00	0.08
Creek 3	Reach 2	064.5		Culvert									
Creek 3	Reach 2	064	PF 1	15.01	193.26	193.79	193.71	193.84	0.003701	1.43	14.44	52.58	0.66







Creek 5 Schematic



Enter/Edit Number of Profiles (25000 max):

Reach Boundary Conditions ...

Apply Data

Locations of Flow Data Changes

River:

Creek 5

Add Multiple...

Reach:

1 of 1

River Sta.:

300

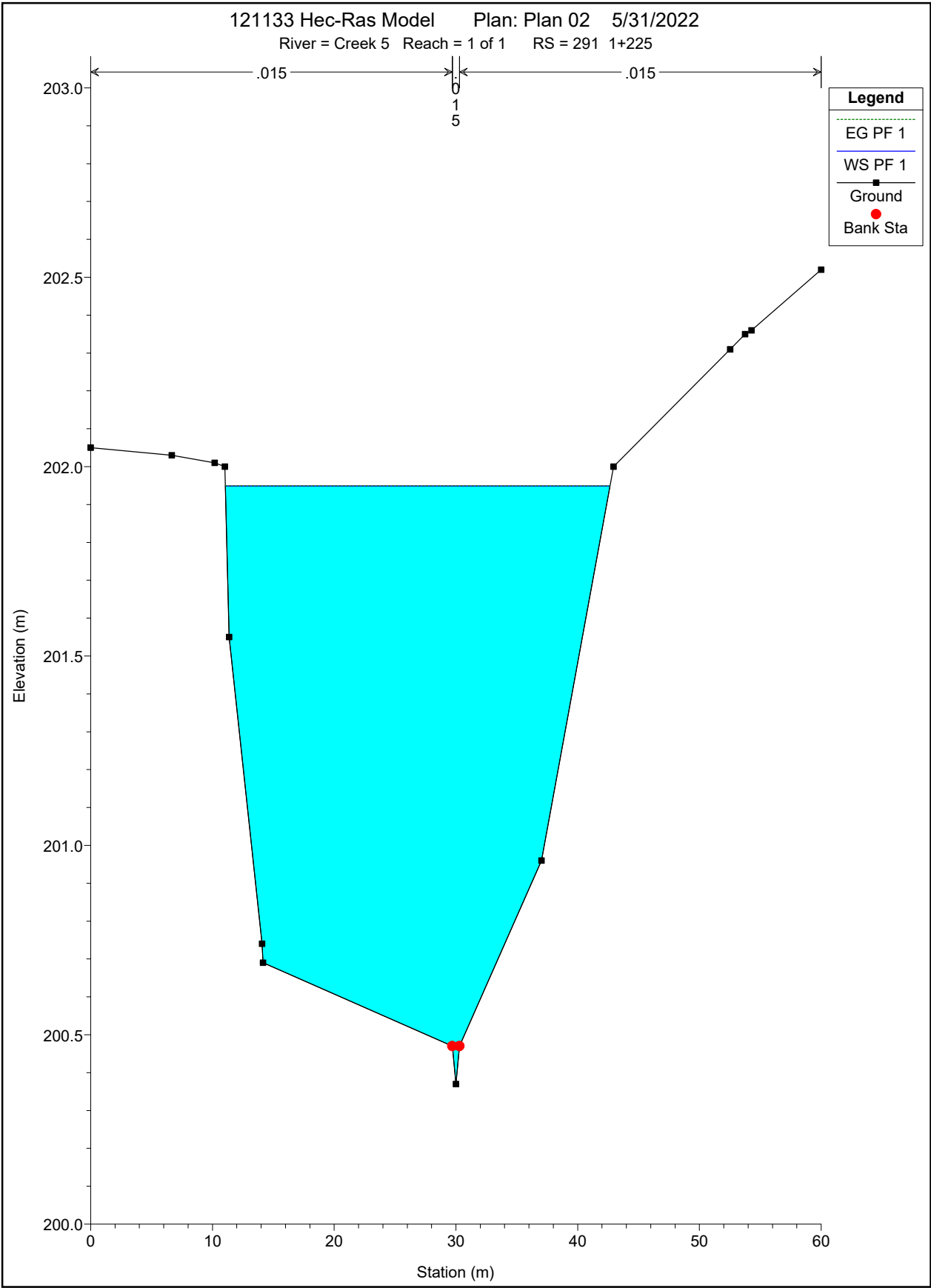
Add A Flow Change Location

Flow Change Location			Profile Names and Flow Rates	
	River	Reach	RS	PF 1
1	Creek 5	1 of 1	300	0.475
2	Creek 5	1 of 1	295	0.761
3	Creek 5	1 of 1	258	0.972

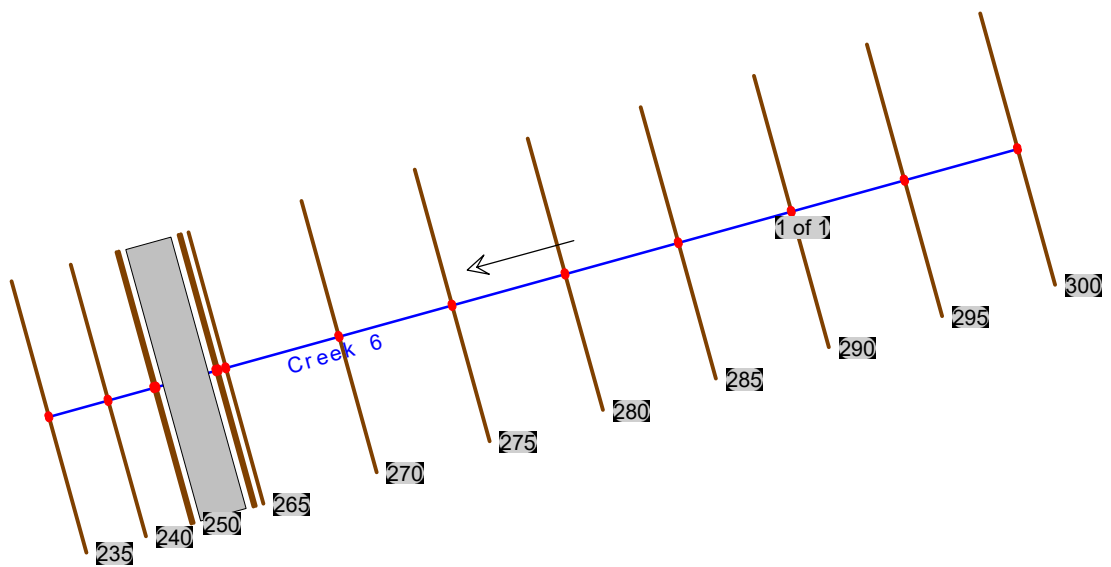
Creek 5 Output Table

HEC-RAS Plan: Plan 02 River: Creek 5 Reach: 1 of 1 Profile: PF 1

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
1 of 1	300	PF 1	0.48	204.00	204.16	204.16	204.18	0.004447	0.98	0.82	18.50	0.95
1 of 1	299	PF 1	0.48	203.37	203.55	203.55	203.57	0.004719	1.06	0.73	14.14	0.98
1 of 1	298	PF 1	0.48	202.97	203.13	203.13	203.15	0.005275	1.05	0.84	22.62	1.03
1 of 1	297	PF 1	0.48	202.35	202.53	202.53	202.56	0.004370	1.10	0.77	15.98	0.97
1 of 1	296	PF 1	0.48	201.87	202.04	202.04	202.06	0.004854	1.07	0.76	16.32	1.00
1 of 1	295	PF 1	0.76	201.57	201.95		201.95	0.000037	0.19	5.87	32.44	0.10
1 of 1	294	PF 1	0.76	201.27	201.95		201.95	0.000006	0.12	10.87	41.26	0.05
1 of 1	293	PF 1	0.76	201.01	201.95		201.95	0.000001	0.07	17.19	42.53	0.02
1 of 1	292	PF 1	0.76	200.72	201.95		201.95	0.000000	0.05	25.42	45.77	0.01
1 of 1	291	PF 1	0.76	200.37	201.95		201.95	0.000000	0.03	35.62	31.61	0.01
1 of 1	262	PF 1	0.76	200.19	201.95	200.68	201.95	0.000007	0.25	6.20	17.42	0.06
1 of 1	260		Culvert									
1 of 1	258	PF 1	0.97	200.18	200.71	200.71	200.86	0.002525	1.99	0.65	2.26	0.91
1 of 1	256	PF 1	0.97	200.14	200.52	200.52	200.60	0.002813	1.65	0.85	4.93	0.91
1 of 1	254	PF 1	0.97	200.12	200.53		200.57	0.001484	1.24	1.18	6.88	0.67
1 of 1	252	PF 1	0.97	200.12	200.48	200.48	200.56	0.003084	1.64	0.89	5.95	0.94
1 of 1	250	PF 1	0.97	200.05	200.35	200.35	200.40	0.003532	1.50	1.04	9.76	0.97



Creek 6 Schematic



Some schematic data outside default extents (see View/Set Schematic Plot Extents...)

None of the XS's are Geo-Referenced (Geo-Ref user entered XS) (Geo-Ref interpolated XS) (Non Geo-Ref user entered XS) (Non Geo-Ref interpolated XS)

Enter/Edit Number of Profiles (25000 max):

Reach Boundary Conditions ...

Apply Data

Locations of Flow Data Changes

River:

Creek 6

Add Multiple...

Reach:

1 of 1

River Sta.:

300

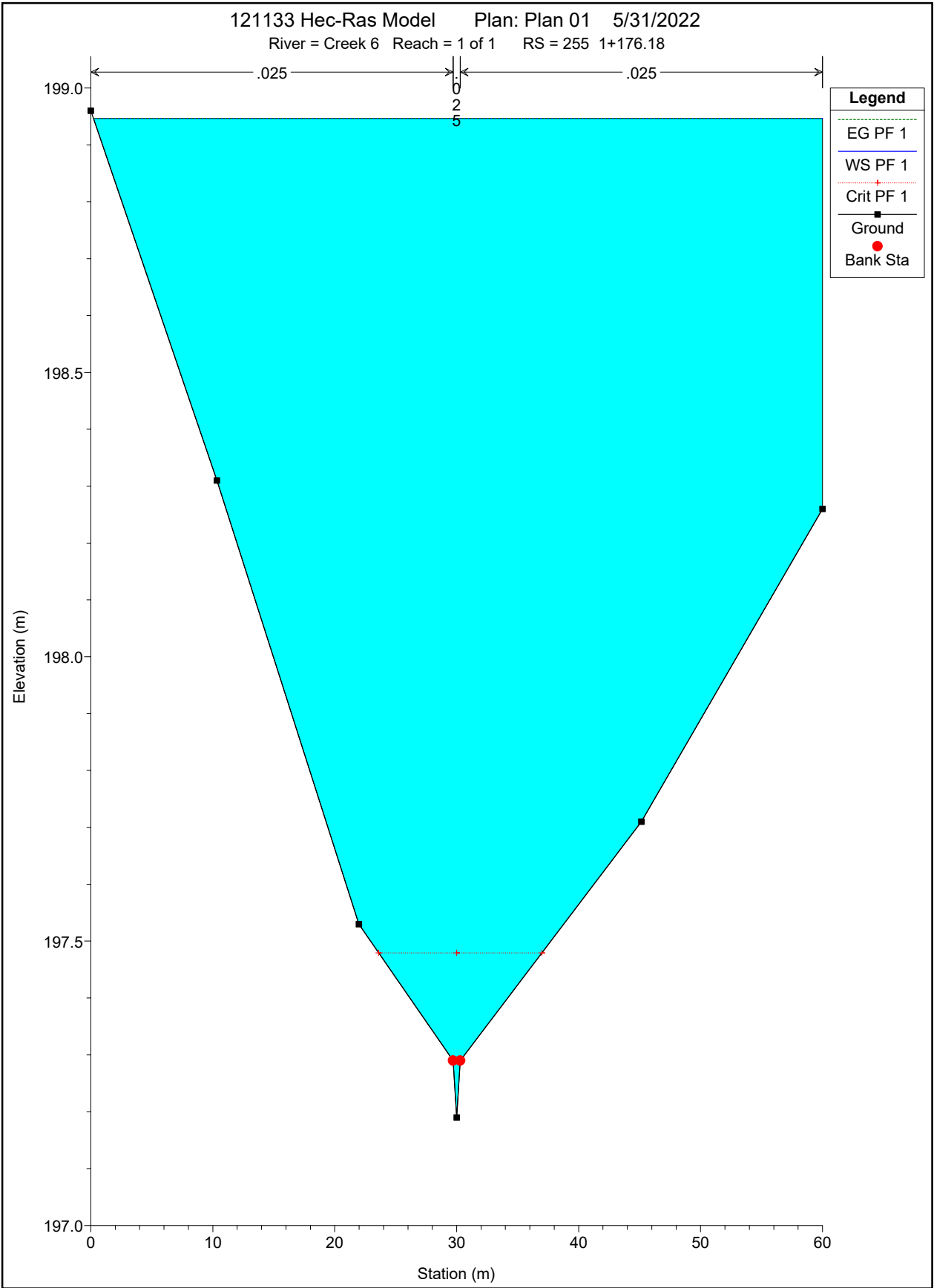
Add A Flow Change Location

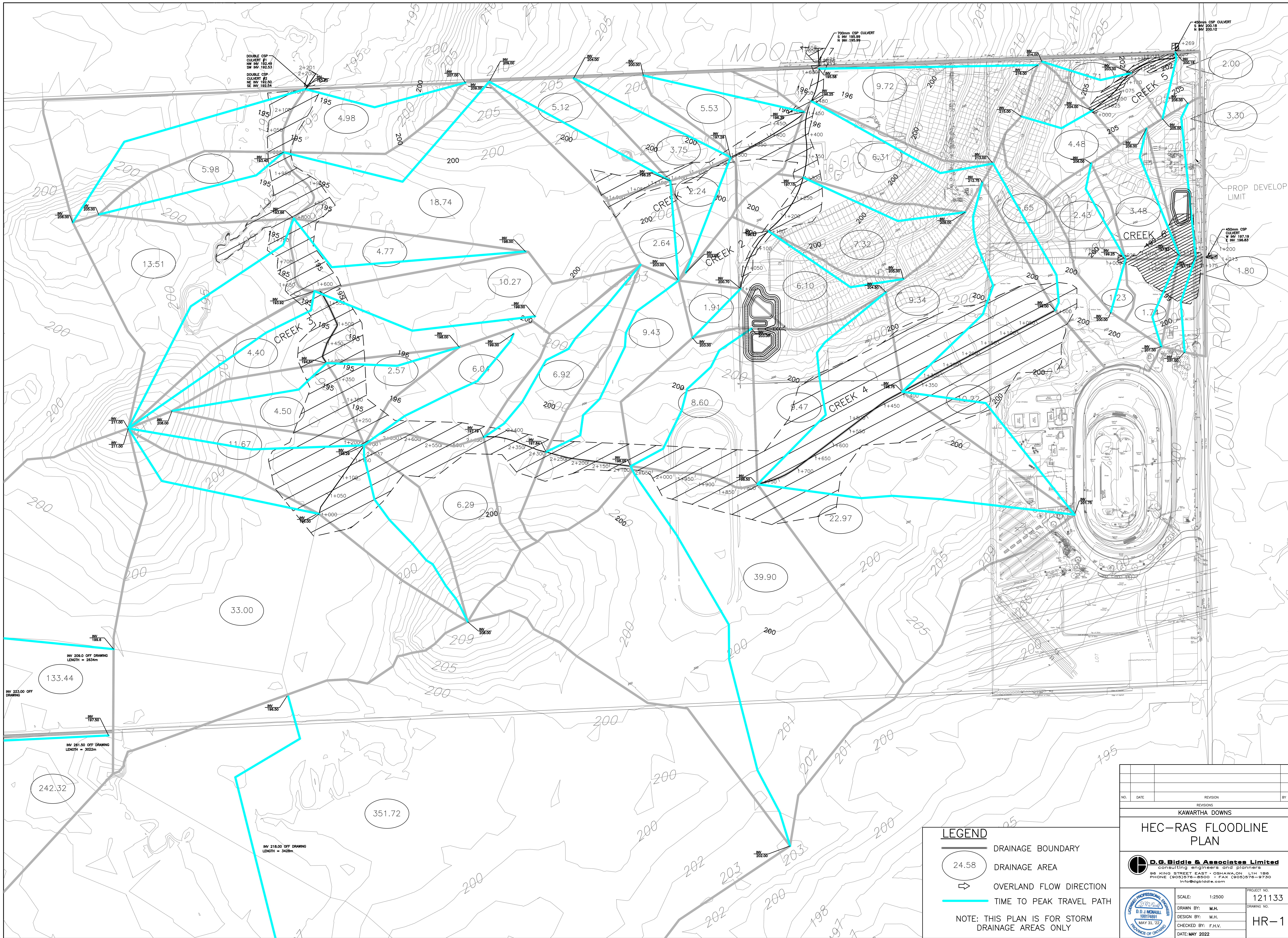
Flow Change Location				Profile Names and Flow Rates
	River	Reach	RS	PF 1
1	Creek 6	1 of 1	300	0.337
2	Creek 6	1 of 1	275	0.75
3	Creek 6	1 of 1	255	1.164

Creek 6 Output Table

HEC-RAS Plan: Plan 01 River: Creek 6 Reach: 1 of 1 Profile: PF 1

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
1 of 1	300	PF 1	0.34	199.25	199.42	199.41	199.43	0.006886	0.77	0.89	25.34	0.72
1 of 1	295	PF 1	0.34	199.04	199.17	199.17	199.18	0.015291	0.86	0.81	37.03	0.99
1 of 1	290	PF 1	0.34	198.75	198.94		198.95	0.001455	0.41	1.67	36.24	0.34
1 of 1	285	PF 1	0.34	198.44	198.95		198.95	0.000001	0.02	19.62	60.00	0.01
1 of 1	280	PF 1	0.34	198.13	198.95		198.95	0.000000	0.01	38.64	60.00	0.00
1 of 1	275	PF 1	0.75	197.82	198.95		198.95	0.000000	0.02	48.89	60.00	0.01
1 of 1	270	PF 1	0.75	197.51	198.95		198.95	0.000000	0.02	49.36	60.00	0.01
1 of 1	265	PF 1	0.75	197.21	198.95		198.95	0.000000	0.02	64.01	60.00	0.00
1 of 1	260	PF 1	0.75	197.20	198.95		198.95	0.000000	0.02	64.18	60.00	0.00
1 of 1	255	PF 1	1.16	197.19	198.95	197.48	198.95	0.000000	0.02	63.82	59.78	0.01
1 of 1	252.5		Culvert									
1 of 1	250	PF 1	1.16	196.83	197.27	197.27	197.37	0.007843	1.83	0.94	4.84	0.93
1 of 1	245	PF 1	1.16	196.82	197.26		197.31	0.004157	1.33	1.26	6.14	0.68
1 of 1	240	PF 1	1.16	196.77	197.27		197.28	0.001075	0.74	2.44	11.49	0.35
1 of 1	235	PF 1	1.16	196.70	197.27	197.02	197.27	0.000230	0.38	4.84	19.87	0.17



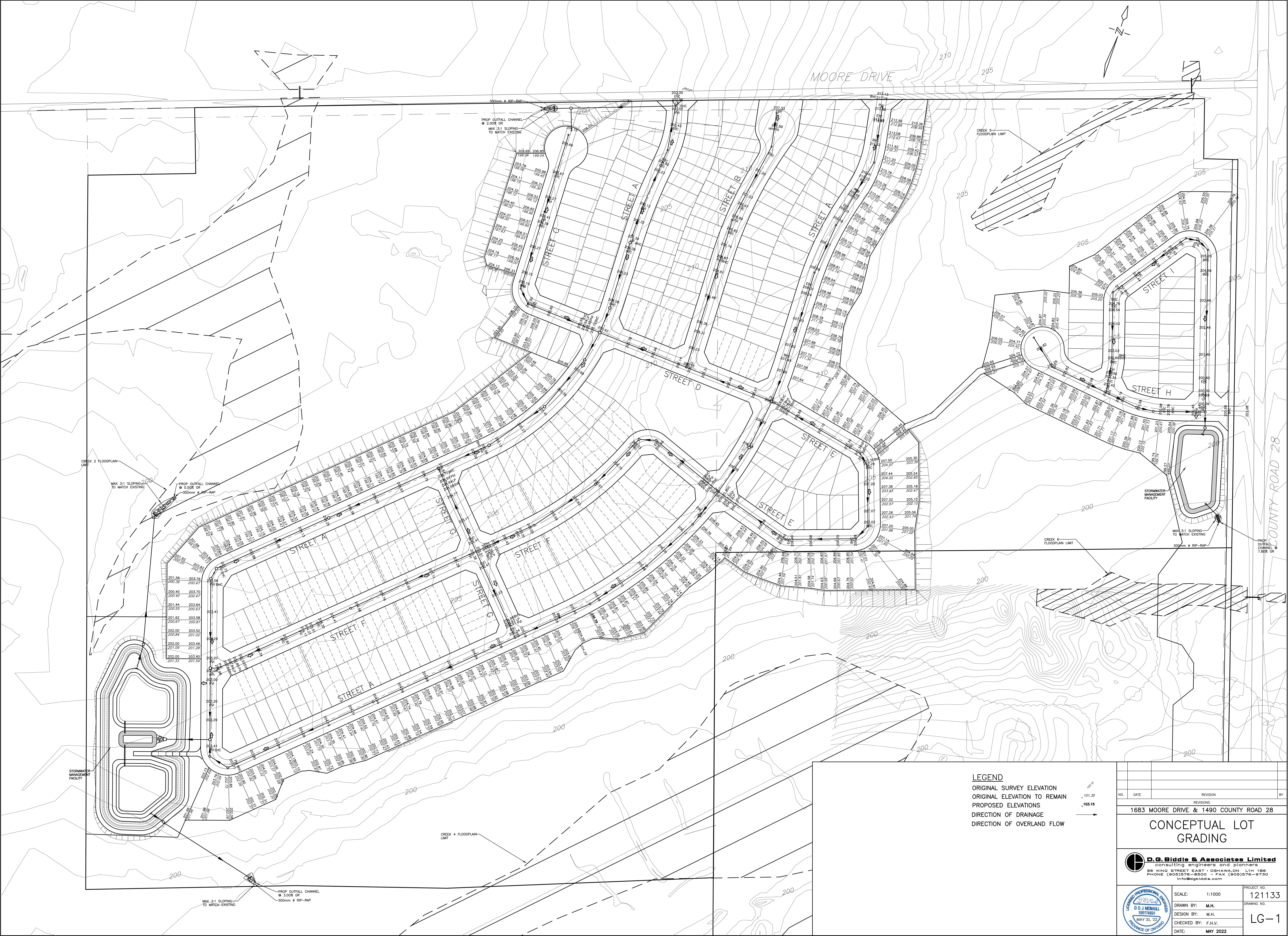


LEGEND

- DRAINAGE BOUNDARY
- 24.58 DRAINAGE AREA
- OVERLAND FLOW DIRECTION
- TIME TO PEAK TRAVEL PATH

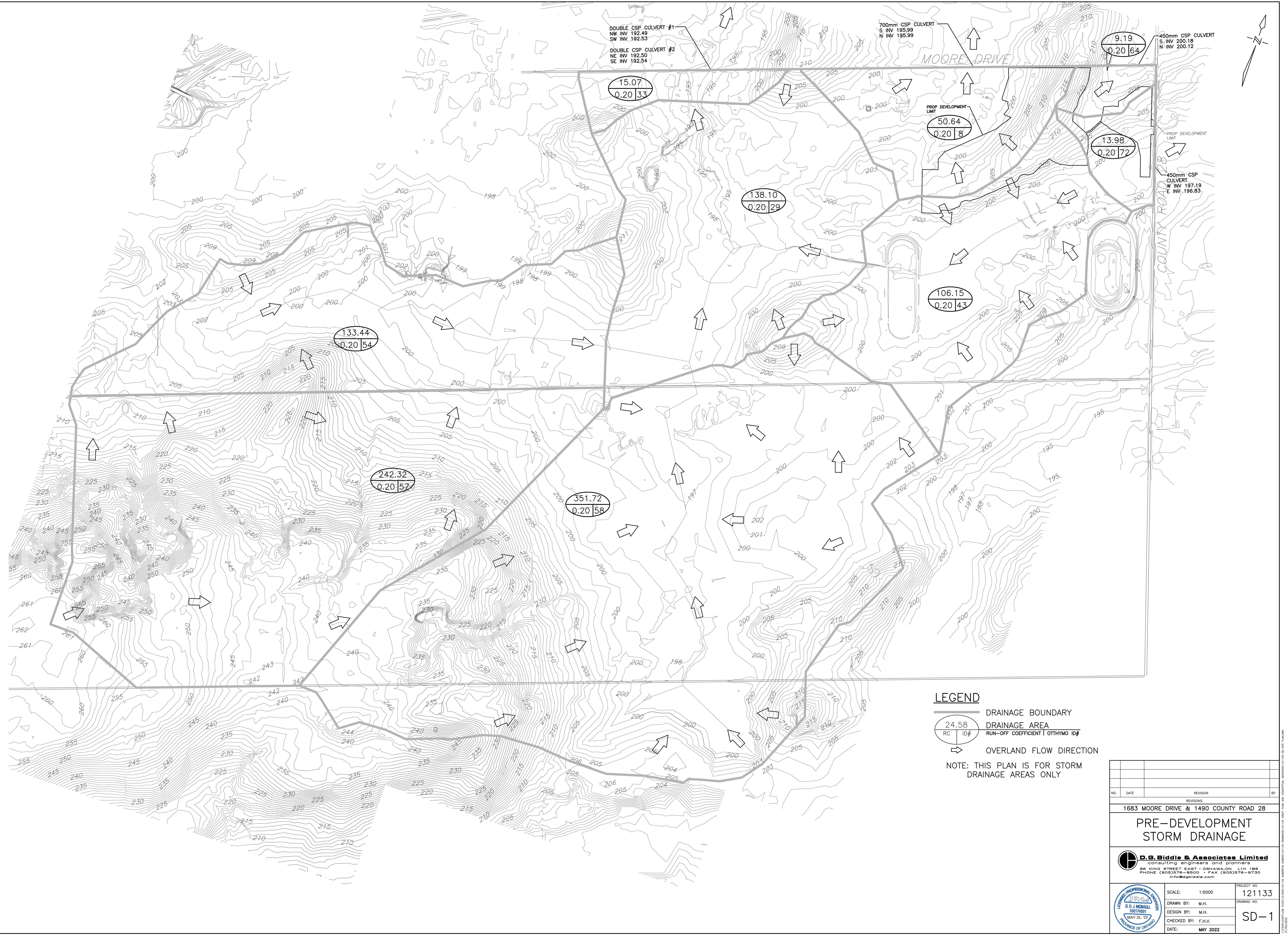
NOTE: THIS PLAN IS FOR STORM DRAINAGE AREAS ONLY

NO.		DATE		REVISION		BY	
KAWARTHA DOWNS							
HEC-RAS FLOODLINE PLAN							
 D.G. Biddle & Associates Limited consulting engineers and planners 96 KING STREET EAST • OSHAWA, ON L1H 1B6 PHONE (905) 576-8500 • FAX (905) 576-9730 info@dgbltd.com							
SCALE: 1:2500		PROJECT NO. 121133		DRAWN BY: M.H.		DRAWING NO.	
DESIGN BY: M.H.		CHECKED BY: F.H.V.		DATE: MAY 2022		HR-1	



LEGEND
ORIGINAL SURVEY ELEVATION
ORIGINAL ELEVATION TO REMAIN
PROPOSED ELEVATIONS
DIRECTION OF DRAINAGE
DIRECTION OF OVERLAND FLOW

NO.		DATE		REVISION		BY	
1683 MOORE DRIVE & 1490 COUNTY ROAD 28							
CONCEPTUAL LOT GRADING							
 D.G. Biddle & Associates Limited consulting engineers and planners 96 KING STREET EAST - OSHAWA, ON L1H 1B6 PHONE (905) 776-8500 • FAX (905) 776-8730 info@dbiddle.com							
							
SCALE:		1:1000		PROJECT NO.		121133	
DRAWN BY:		M.H.		DRAWING NO.		LG-1	
DESIGN BY:		M.H.		DATE:		MAY 2022	
CHECKED BY:		F.H.V.					



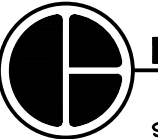
LEGEND

— DRAINAGE BOUNDARY

24.58
RC ID# DRAINAGE AREA
RUN-OFF COEFFICIENT | OTHYMO ID#

⇨ OVERLAND FLOW DIRECTION

NOTE: THIS PLAN IS FOR STORM DRAINAGE AREAS ONLY

NO.	DATE	REVISION	BY
REVISIONS			
1683 MOORE DRIVE & 1490 COUNTY ROAD 28			
PRE-DEVELOPMENT STORM DRAINAGE			
 D.G. Biddle & Associates Limited consulting engineers and planners 86 KING STREET EAST • OSHAWA, ON L1H 1B6 PHONE (905) 576-8500 • FAX (905) 576-9730 info@dgibiddle.com			
		SCALE: 1:5000 DRAWN BY: M.H. DESIGN BY: M.H. CHECKED BY: F.H.V. DATE: MAY 2022	PROJECT NO: 121133 DRAWING NO: SD-1



LEGEND

- DRAINAGE BOUNDARY
- 0.25 DRAINAGE AREA
- 90 RUN-OFF COEFFICIENT
- ⇨ OVERLAND FLOW DIRECTION

NOTE: THIS PLAN IS FOR STORM DRAINAGE AREAS ONLY

NO.	DATE	REVISION	BY

1683 MOORE DRIVE & 1490 COUNTY ROAD 28

POST-DEVELOPMENT STORM DRAINAGE

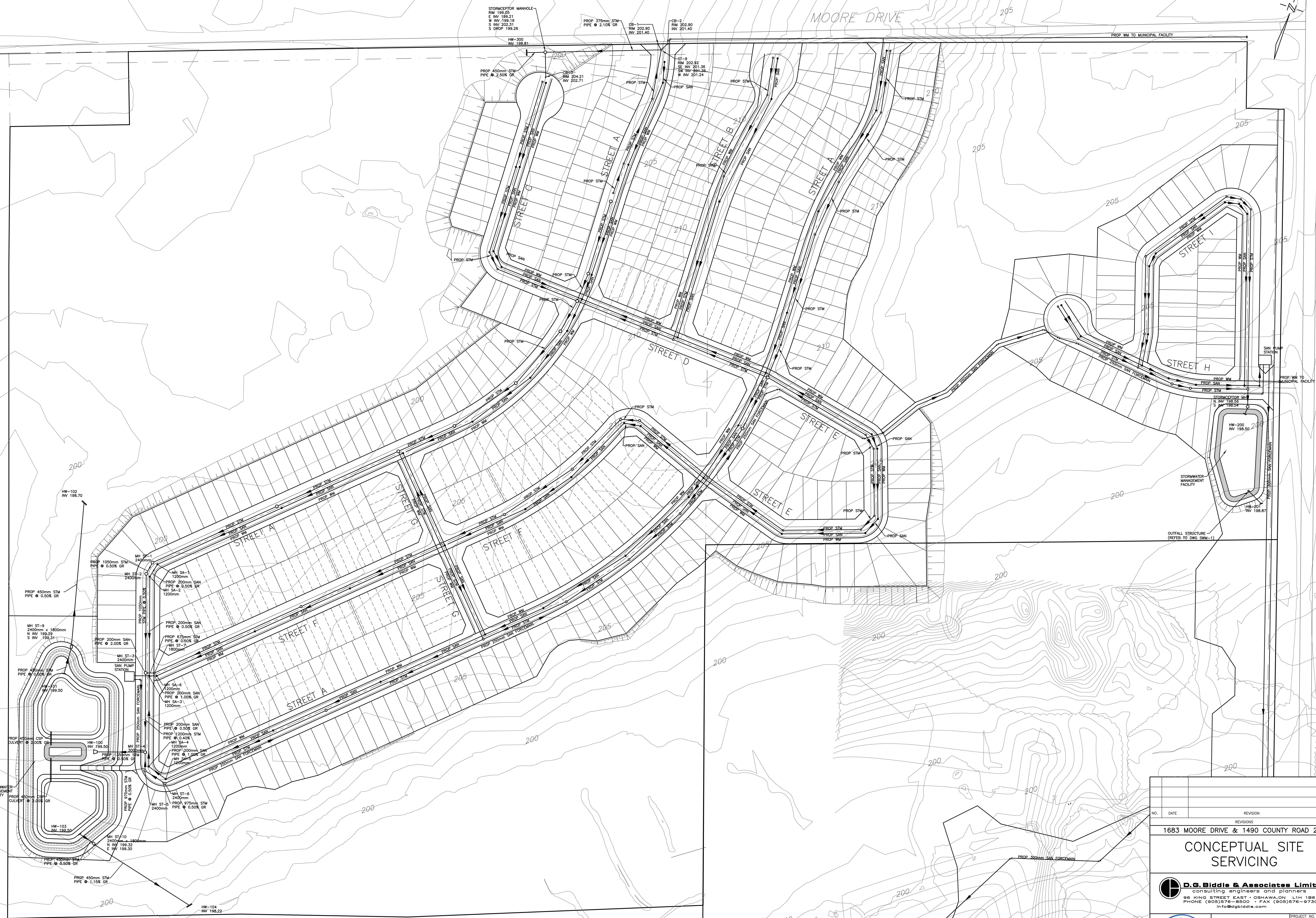
D.G. Biddle & Associates Limited
 consulting engineers and planners
 99 KING STREET EAST • OSHAWA, ON L1H 1B6
 PHONE (905) 576-8500 • FAX (905) 576-9730
 info@dgbbiddle.com



SCALE: 1:1000
 DRAWN BY: M.H.
 DESIGN BY: M.H.
 CHECKED BY: F.H.V.
 DATE: MAR 2022

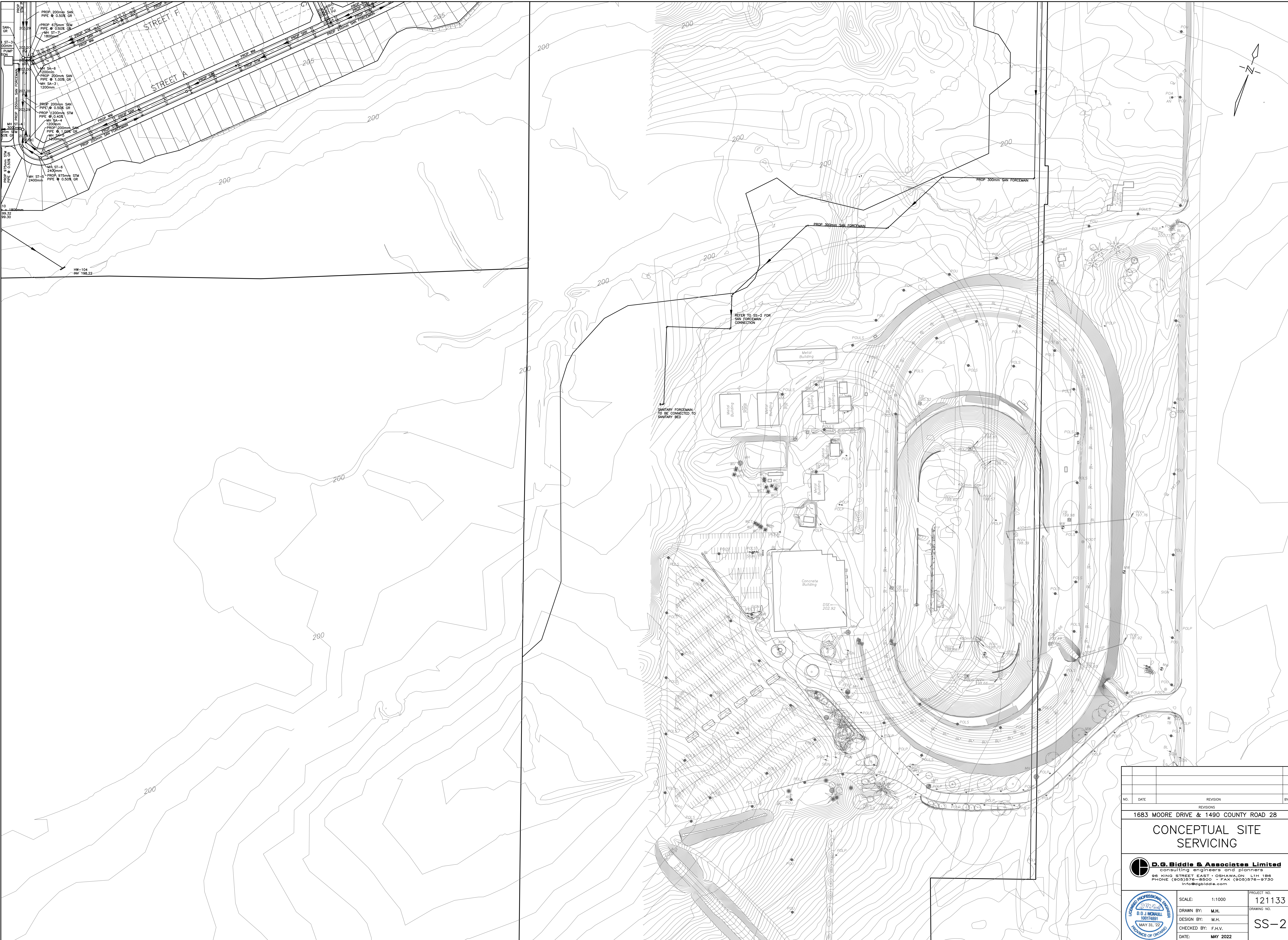
PROJECT NO. 121133
 DRAWING NO. SD-2

UPSTREAM (REFER TO SD-1)

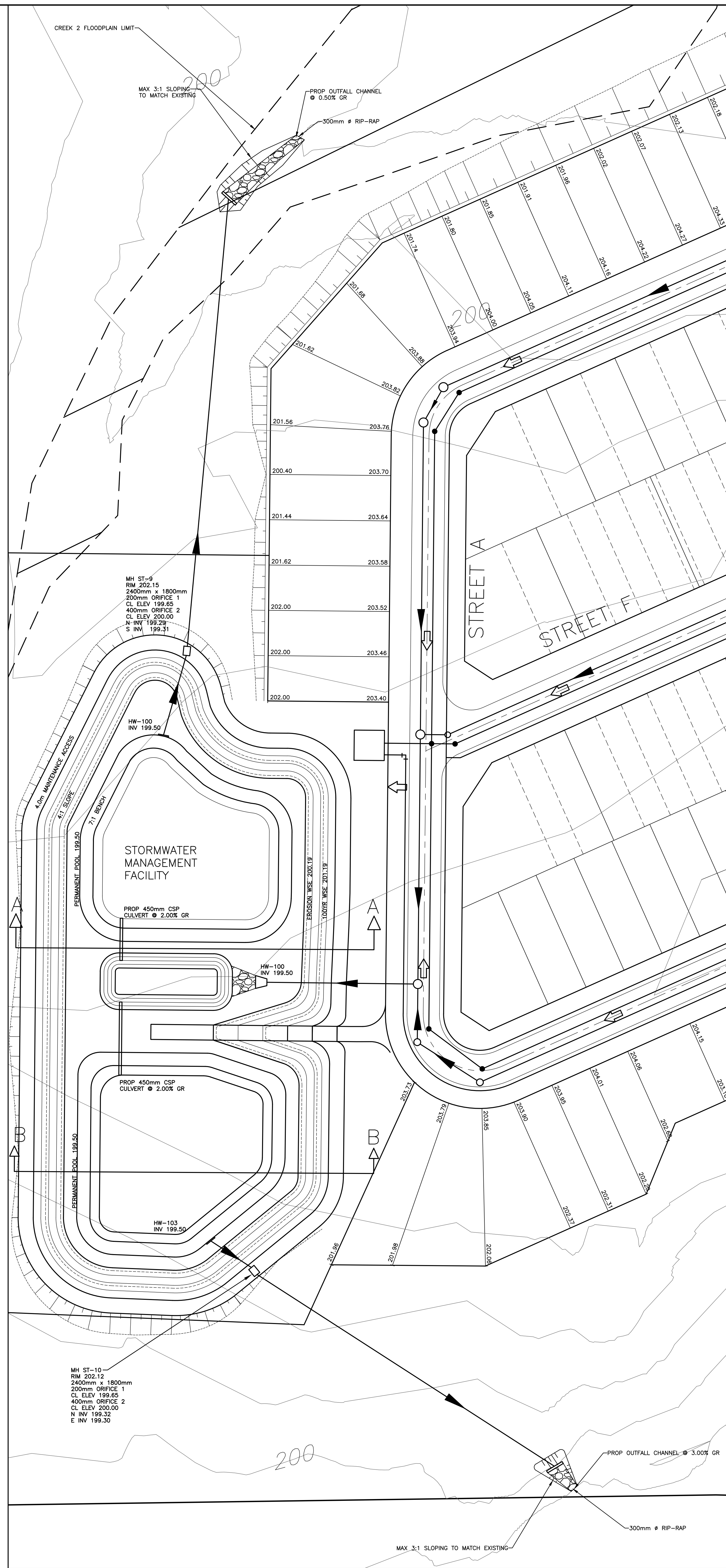


COUNTY ROAD 28

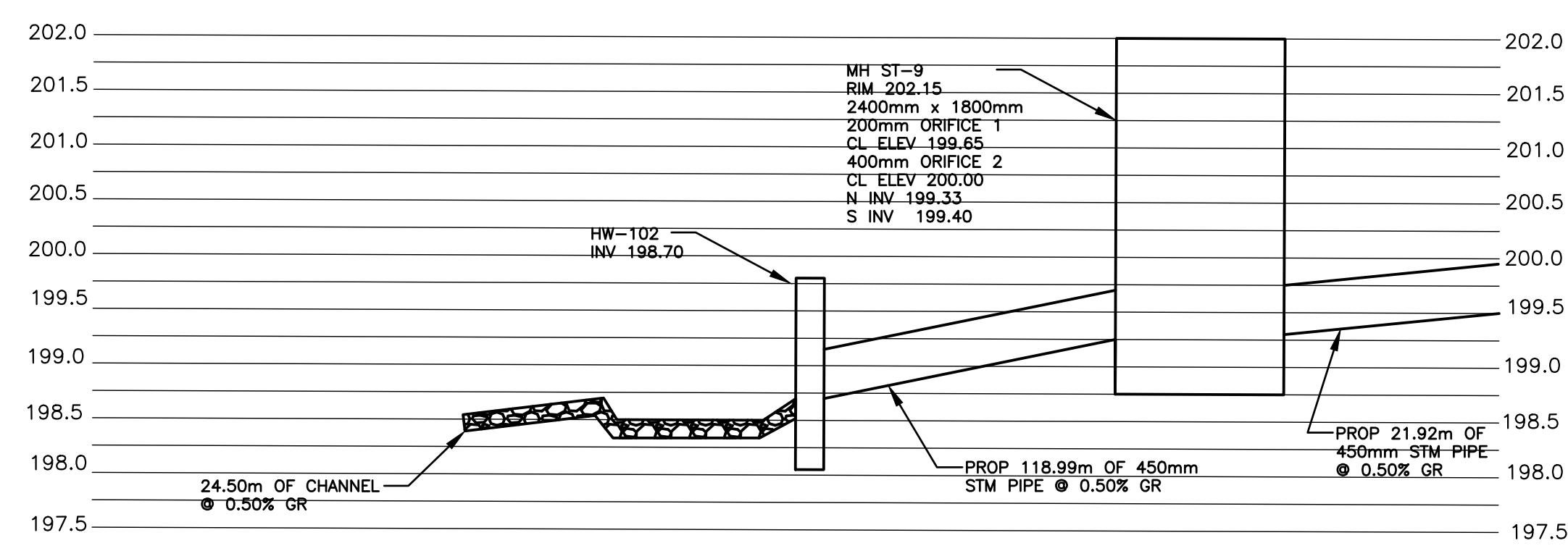
NO.	DATE	REVISION			
REVISIONS					
1683 MOORE DRIVE & 1490 COUNTY ROAD 28					
CONCEPTUAL SITE SERVICING					
 D.G. Biddle & Associates Limited consulting engineers and planners 96 KING STREET EAST • OSHAWA, ON L1H 1B6 PHONE: (905) 876-1800 • FAX: (905) 876-9730 info@dgbiddle.com					
		SCALE: 1:1000	PROJECT NO. 121133		
		DRAWN BY: M.H.	DRAWING NO.		
		DESIGN BY: M.H.			
		CHECKED BY: F.H.V.			
		DATE: MAY 2022	SS-1		



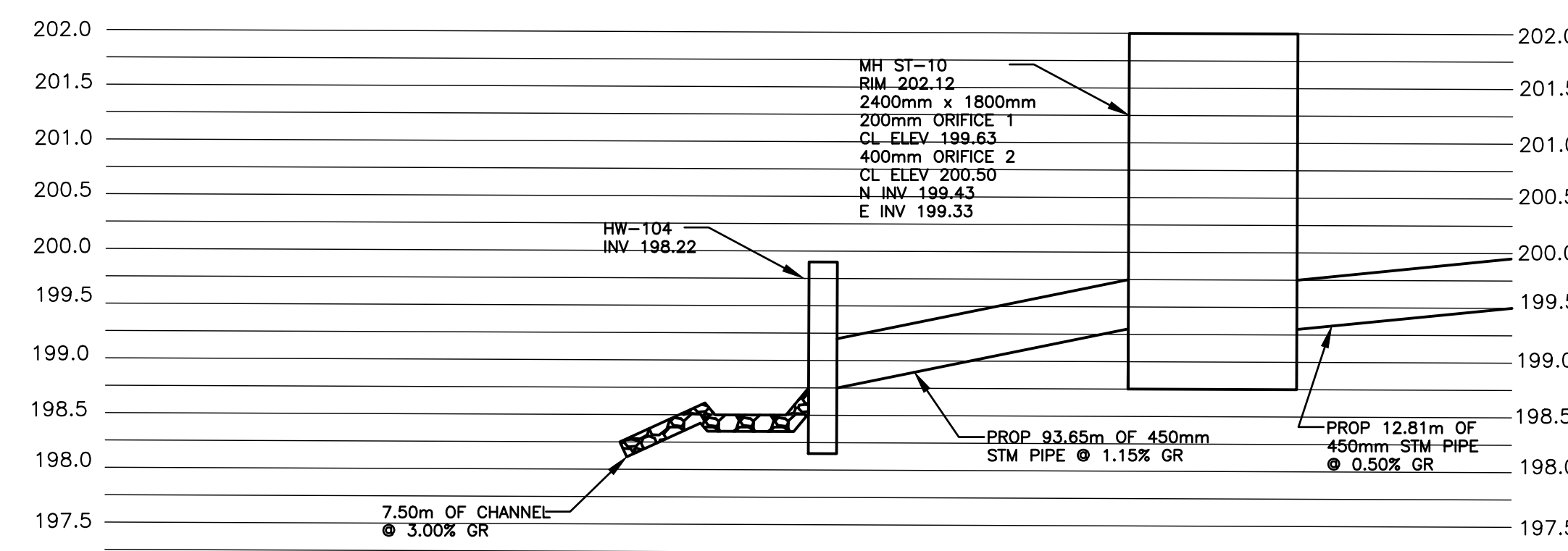
NO.		DATE		REVISION		BY	
1683 MOORE DRIVE & 1490 COUNTY ROAD 28							
CONCEPTUAL SITE SERVICING							
 D.G. Biddle & Associates Limited consulting engineers and planners 88 KING STREET EAST • OSHAWA, ON L1H 1B6 PHONE (905) 576-8800 • FAX (905) 576-9730 info@dgbliddle.com							
		SCALE: 1:1000		PROJECT NO. 121133			
DRAWN BY: M.H.		DESIGN BY: M.H.		DRAWING NO. SS-2			
CHECKED BY: F.H.V.		DATE: MAY 2022					



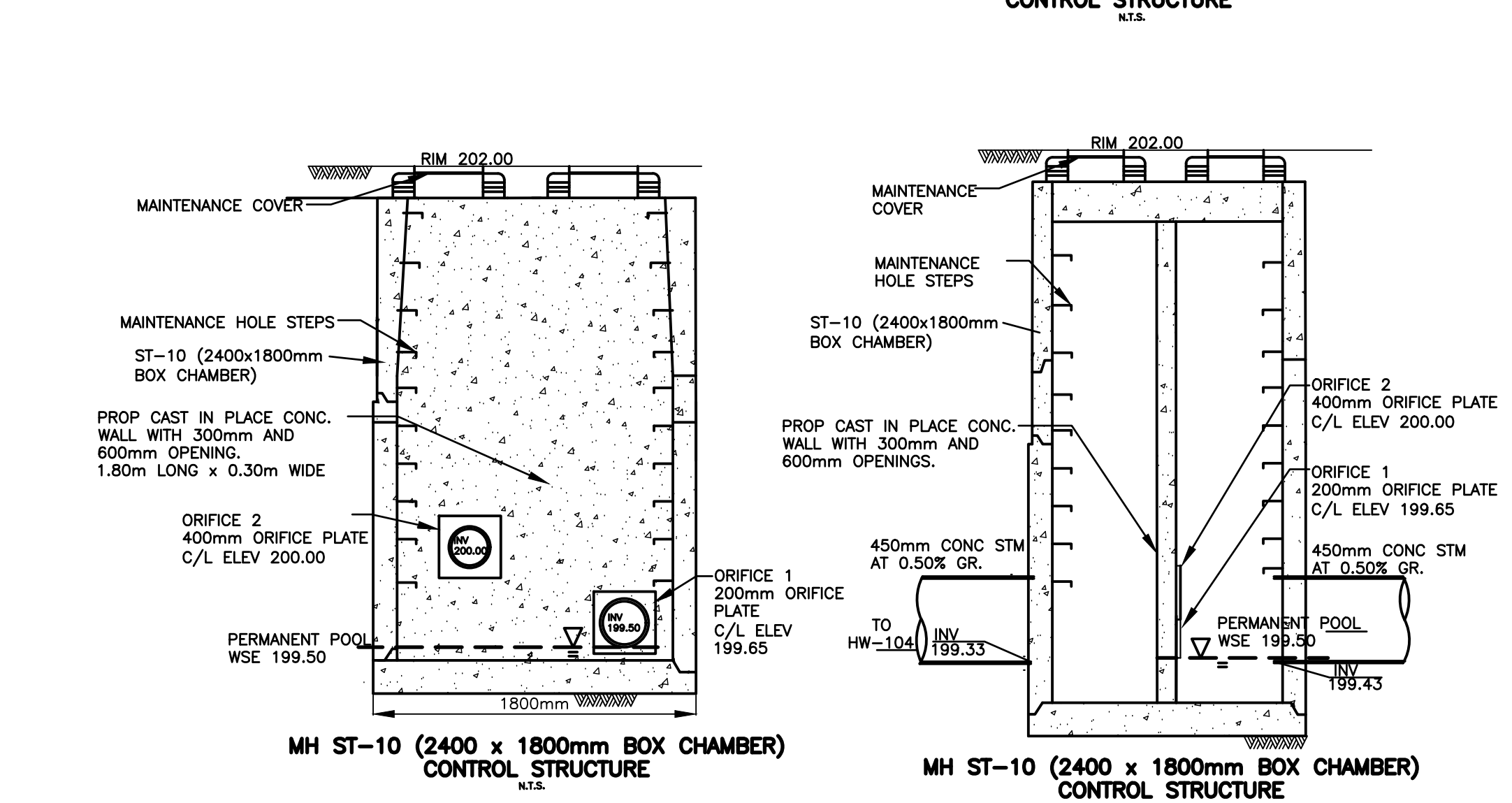
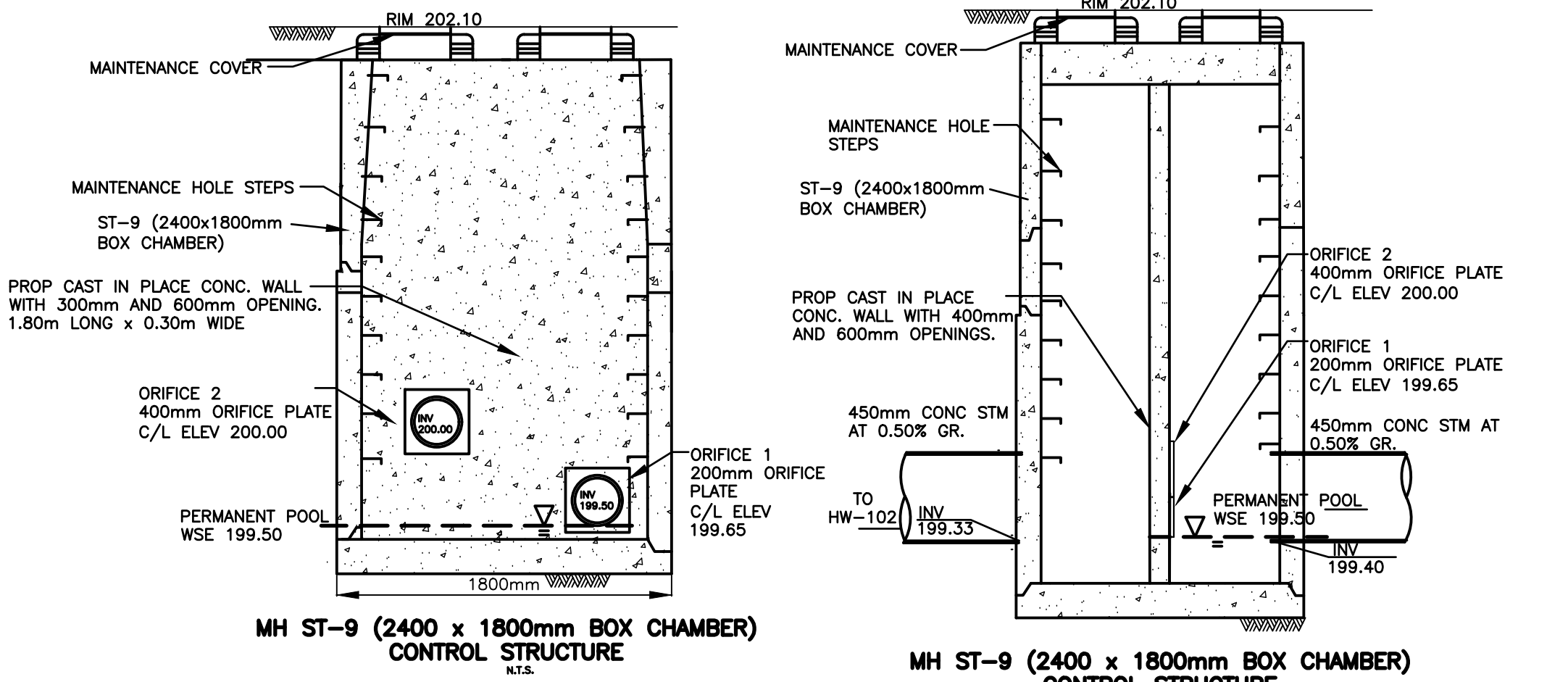
STORMWATER MANAGEMENT WET POND
SCALE 1:500



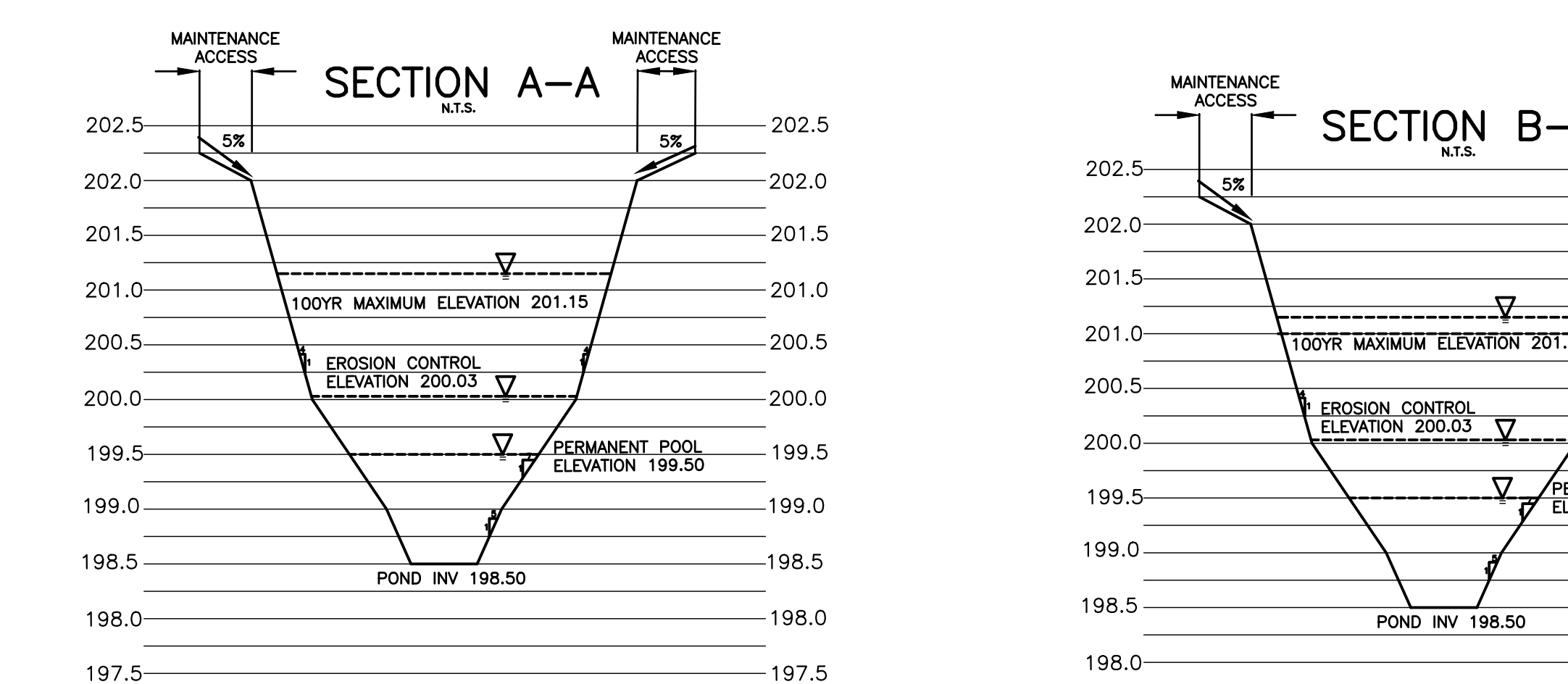
NORTH OUTFALL
N.T.S.



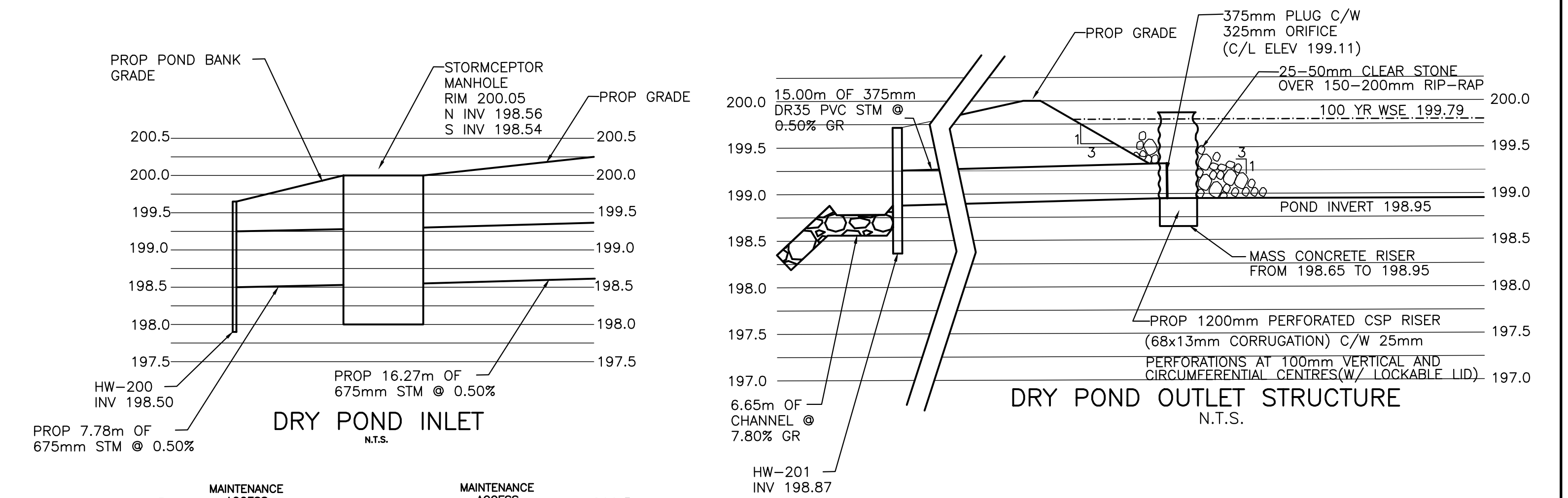
SOUTH OUTFALL
N.T.S.



STORMWATER MANAGEMENT WET POND DETAILS
SCALE NTS



STORMWATER MANAGEMENT WET POND SECTIONS
SCALE NTS



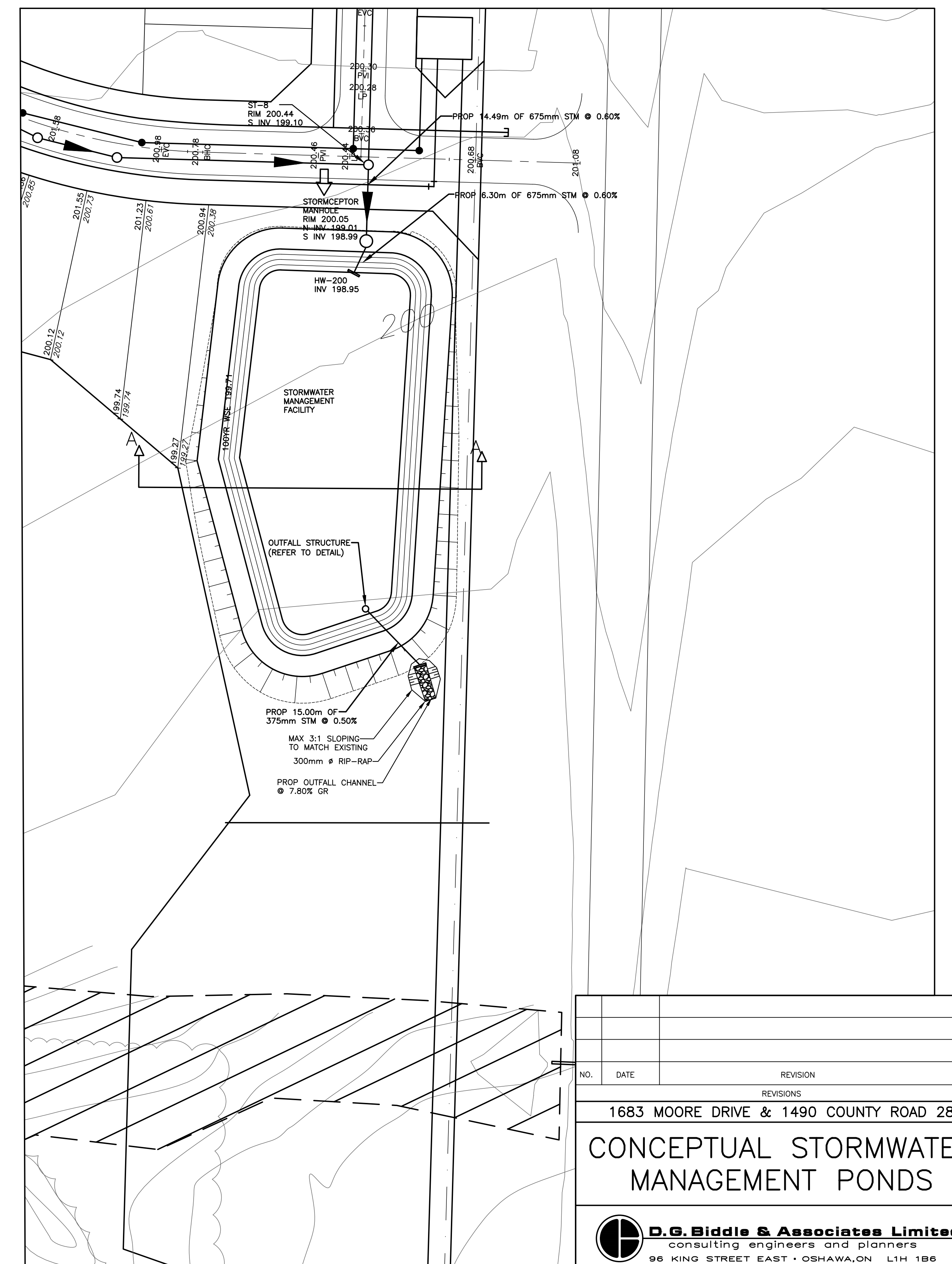
DRY POND INLET
N.T.S.

DRY POND OUTLET STRUCTURE
N.T.S.

SECTION A-A
N.T.S.

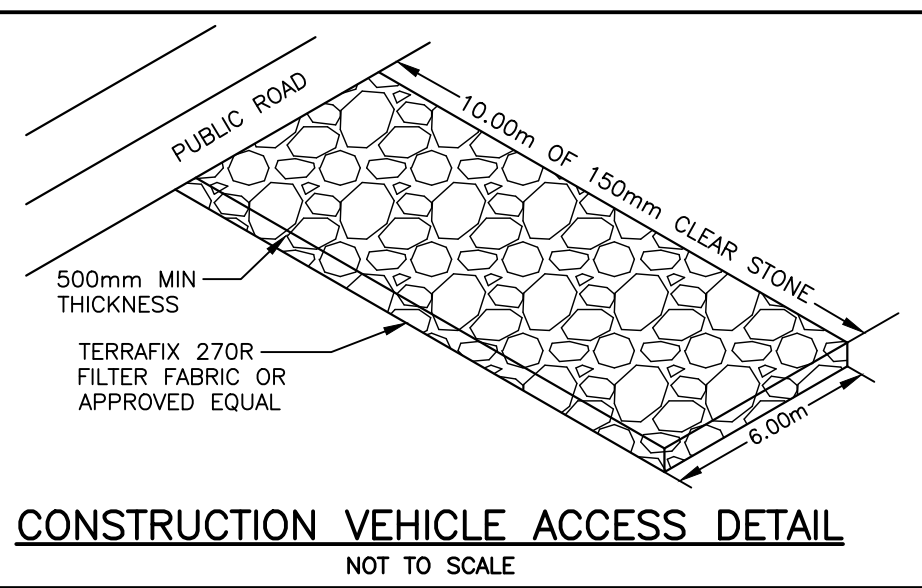
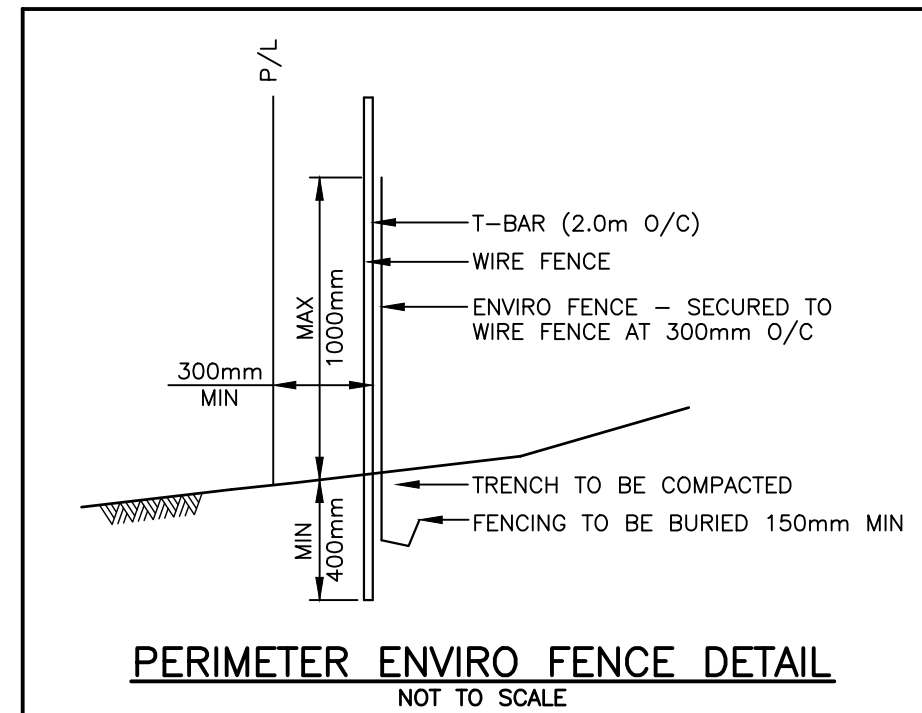
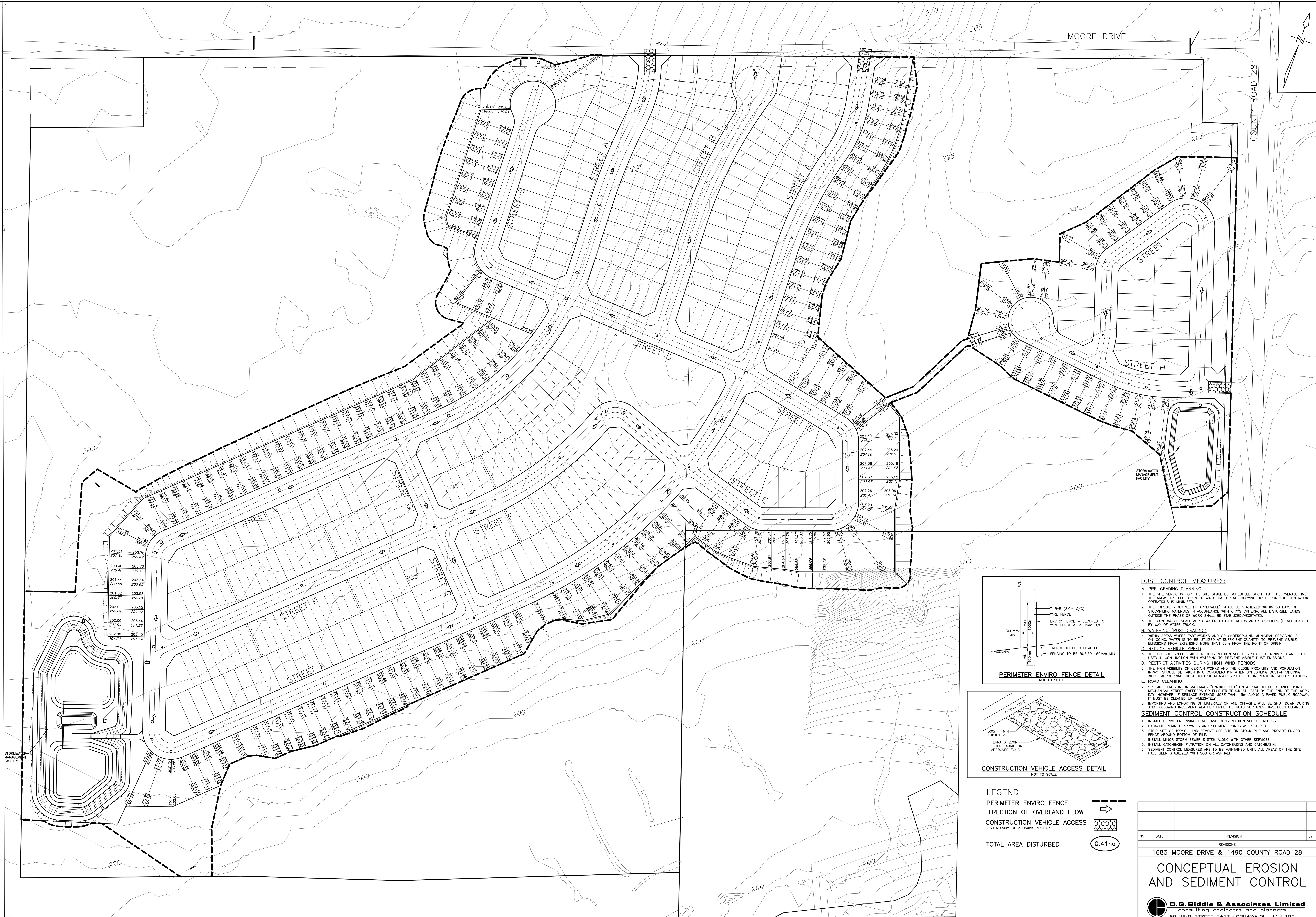
DRY POND INLET CONTROL
DEVICE MOUNTING DETAIL
N.T.S.

STORMWATER MANAGEMENT DRY POND DETAILS
SCALE NTS



STORMWATER MANAGEMENT
DRY POND
SCALE 1:500

NO.	DATE	REVISION	BY
1683 MOORE DRIVE & 1490 COUNTY ROAD 28			
CONCEPTUAL STORMWATER MANAGEMENT PONDS			
consulting engineers and planners 88 KING STREET EAST • OSHAWA, ON L1H 1B8 PHONE (905) 576-8500 • FAX (905) 576-9730 info@dgibiddle.com			
PROJECT NO. 121133		DRAWING NO. SWM-1	
SCALE: 1:500		DATE: MAY 2022	
DRAWN BY: M.H.		DESIGN BY: M.H.	
CHECKED BY: F.H.V.		DATE: MAY 2022	



LEGEND

PERIMETER ENVIRO FENCE

DIRECTION OF OVERLAND FLOW

CONSTRUCTION VEHICLE ACCESS

20x10x0.50m OF 300mm RP RAP

TOTAL AREA DISTURBED

0.41ha

- DUST CONTROL MEASURES:**
- A. PRE-GRADING PLANNING**
1. THE SITE SERVING FOR THE SITE SHALL BE SCHEDULED SUCH THAT THE OVERALL TIME THE AREAS ARE LEFT OPEN TO WIND THAT CREATE BLOWING DUST FROM THE EARTHWORK OPERATIONS IS MINIMIZED.
 2. THE TOPSOIL STOCKPILE (IF APPLICABLE) SHALL BE STABILIZED WITHIN 30 DAYS OF STOCKPILING MATERIALS IN ACCORDANCE WITH CITY'S CRITERIA. ALL DISTURBED LANDS OUTSIDE THE PHASE OF WORK SHALL BE STABILIZED/VEGETATED.
 3. THE CONTRACTOR SHALL APPLY WATER TO HAUL ROADS AND STOCKPILES (IF APPLICABLE) BY WAY OF WATER TRUCK.
- B. WATERING (POST GRADING)**
4. WITHIN AREAS WHERE EARTHWORKS AND OR UNDERGROUND MUNICIPAL SERVING IS ON-GOING, WATER IS TO BE UTILIZED AT SUFFICIENT QUANTITY TO PREVENT VISIBLE EMISSIONS FROM EXTENDING MORE THAN 30m FROM THE POINT OF ORIGIN.
- C. REDUCE VEHICLE SPEED**
5. THE ON-SITE SPEED LIMIT FOR CONSTRUCTION VEHICLES SHALL BE MINIMIZED AND TO BE USED IN CONJUNCTION WITH WATERING TO PREVENT VISIBLE DUST EMISSIONS.
- D. RESTRICT ACTIVITIES DURING HIGH WIND PERIODS**
6. THE HIGH VISIBILITY OF CERTAIN WORKS AND THE CLOSE PROXIMITY AND POPULATION IMPACT SHOULD BE TAKEN INTO CONSIDERATION WHEN SCHEDULING DUST-PRODUCING WORK. APPROPRIATE DUST CONTROL MEASURES SHALL BE IN PLACE IN SUCH SITUATIONS.
- E. ROAD CLEANING**
7. SPILLAGE, EROSION OR MATERIALS "TRACKED OUT" ON A ROAD TO BE CLEANED USING MECHANICAL STREET SWEEPERS OR FLUSHER TRUCK AT LEAST BY THE END OF THE WORK DAY. HOWEVER, IF SPILLAGE EXTENDS MORE THAN 15m ALONG A PAVED PUBLIC ROADWAY, IT MUST BE CLEANED UP IMMEDIATELY.
 8. IMPORTING AND EXPORTING OF MATERIALS ON AND OFF-SITE WILL BE SHUT DOWN DURING AND FOLLOWING INCLEMENT WEATHER UNTIL THE ROAD SURFACES HAVE BEEN CLEANED.
- SEDIMENT CONTROL CONSTRUCTION SCHEDULE**
1. INSTALL PERIMETER ENVIRO FENCE AND CONSTRUCTION VEHICLE ACCESS.
 2. EXCAVATE PERIMETER SHALES AND SEDIMENT PONDS AS REQUIRED.
 3. STRIP SITE OF TOPSOIL AND REMOVE OFF SITE OR STOCK PILE AND PROVIDE ENVIRO FENCE AROUND BOTTOM OF PILE.
 4. INSTALL MINOR STORM SEWER SYSTEM ALONG WITH OTHER SERVICES.
 5. INSTALL CATCH-BASIN FILTRATION ON ALL CATCHBASINS AND CATCH-BASIN.
 6. SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED UNTIL ALL AREAS OF THE SITE HAVE BEEN STABILIZED WITH SOD OR ASPHALT.

NO.	DATE	REVISION	BY
REVISIONS			
1683 MOORE DRIVE & 1490 COUNTY ROAD 28			
CONCEPTUAL EROSION AND SEDIMENT CONTROL			
consulting engineers and planners			
96 KING STREET EAST • OSHAWA, ON L1H 1B6			
PHONE (905)576-8500 • FAX (905)576-9730			
info@dgbiddle.com			
PROJECT NO.		121133	
DRAWN BY:		M.H.	
DESIGN BY:		M.H.	
CHECKED BY:		F.H.V.	
DATE:		MAY 2022	