



# Functional Servicing and Stormwater Management Report

## **1580-1590 & 1650 Dundas Street East**

Official Plan Amendment and Zoning Bylaw  
Amendment Applications

Project No.: 20129

City of Mississauga, Ontario

Prepared For:

**Hazelview Investments**

Date: October 2023

Version: 2<sup>nd</sup> Submission





## EXECUTIVE SUMMARY

This Functional Servicing and Stormwater Management Report ('FSSR') has been prepared to support official plan amendment ('OPA') and zoning bylaw amendment ('ZBA') applications for the site municipally known as 1580-1590 & 1650 Dundas Street East, Ontario (referred to as 'the site' or 'subject site').

The development proposal for the 7.39 ha site is to include for the development of 5 mixed-use development blocks, parkland and creek hazard dedications and an allowance for a future right of way bridge extension over Little Etobicoke Creek. The blocks will contain a total of 2,877 units, along with 6,094m<sup>2</sup> and 366m<sup>2</sup> of retail and community space respectively. Mattawa Avenue is proposed to have a modified above grade cross-section, including a widening. Dundas Street East is also proposed to be widened, by others.

The servicing strategy for the proposed development is summarized as follows:

### **Water Servicing:**

Mattawa Avenue contains a 300mm diameter watermain, which is the proposed watermain for all block level connections. The domestic and fire flow water demands were calculated in accordance with City of Mississauga and Region of Peel criteria and FUS methodology. A fire hydrant connected into the Mattawa Avenue watermain was flow tested and confirmed that each block's critical water demands can be met by existing infrastructure.

### **Sanitary Servicing:**

Mattawa Avenue contains a 250mm diameter municipal sanitary sewer, which is the proposed sanitary sewer for all block level connections. It is our understanding that the



Region will install a new 1200mm diameter trunk sewer under Mattawa Avenue, and the existing sewers in Mattawa Avenue will be connected into this trunk sewer. The development proposal will result in an increase in equivalent population and peak flow to the Region's sewer system. A downstream sanitary sewer analysis was completed to confirm the current capacity of the existing sanitary sewers on Mattawa. A summary of peak flow, along with the Region's multi-demand table, has been included in this report. As a result, it will be necessary to increase the diameter of four segments of the current sanitary sewer system in order to accommodate the sanitary wastewater generated by the planned development.

### **Stormwater Servicing:**

The subject site currently drains stormwater to Mattawa Avenue and in turn Little Etobicoke Creek. All development blocks will have storm connections into the existing storm sewers within Mattawa Avenue. A comparison of City and TRCA stormwater management requirements were completed to establish required block level controls. Preliminary controls have been established in order to meet stormwater objectives.



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## 1.0 INTRODUCTION

### 1.1 Background

This Functional Servicing and Stormwater Management Report ('FSSR') has been prepared to support official plan amendment ('OPA'), zoning bylaw amendment ('ZBA') applications and draft plan of subdivision ('DPOS') for the site municipally known as 1580-1590 & 1650 Dundas Street East, Ontario (referred to as 'the site' or 'subject site').

The development proposal for the 7.39 ha site is to include for the development of 5 mixed-use development blocks, parkland and creek hazard dedications and an allowance for a future right of way bridge extension over Little Etobicoke Creek. The development blocks will contain a total of 2,877 units, along with 6,094m<sup>2</sup> and 366m<sup>2</sup> of retail and community space respectively. There are three (3) levels of underground parking, as shown on the architectural plans. Mattawa Avenue is proposed to have a new above grade cross-section along with a widening.

For the purposes of rezoning and draft plan approval, one service connection by type has been provided for each block. The number of actual connections per block will be confirmed at detailed design.

Refer to the architectural plan extracts that are included in **Appendix A** for more information. **Figure 1 – Site Location** illustrates the subject site within the context of its surroundings. General project statistics are as follows in **Table 1**:



**Table 1: Project Summary**

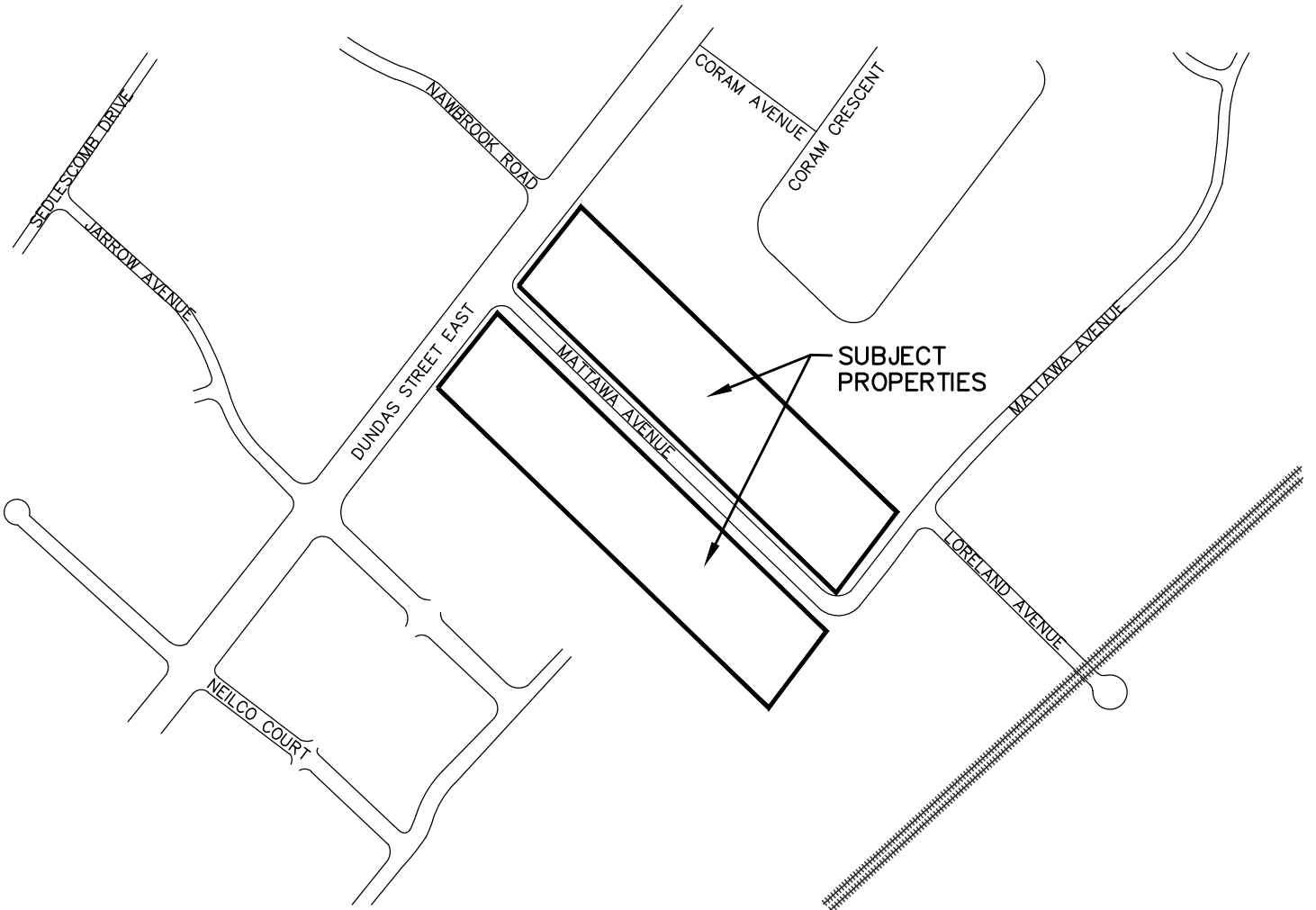
Block	ID Ref.	Building	Use	Block Area (m2)	Residential Units
<b>BLOCKS</b>					
A	1	A1, A2, A3	Residential & Retail	10,570.00	1,041
C	2	C1, C2, C3	Residential, Retail & Community	6,210.00	427
E	3	E1, E2, E3	Residential & Retail	12,780.00	515
F	4	F1, FTH-1, FTH-2, F3	Residential	12,320.00	379
G	5	G1, G2, GTH	Residential	11,260.00	515
H	7	n/a	Creek Buffer/Open Space	6,960.00	-
<b>Sub-Total - Blocks:</b>				<b>60,100.00</b>	<b>2,877</b>
<b>CONVEYANCES</b>					
B	6	n/a	Park	10,290.00	0
Partial Public ROW	n/a	n/a	Loreland Avneue	389.00	0
ROW Widening A	9	n/a	Dundas Street E Widening	330.00	0
ROW Widening B	10	n/a	Dundas Street E Widening	400.00	0
ROW Area 1	11	n/a	Mattawa Ave Widening	330.00	0
ROW Area 2	8	n/a	Creek Overpass	1,600.00	0
ROW Area 3	12	n/a	Mattawa Ave Widening	450.00	0
<b>Sub-Total - Conveyances:</b>				<b>13,789.00</b>	<b>0</b>
<b>Total Original Site:</b>				<b>73,889.00</b>	<b>n/a</b>
<b>Total Developable Lands (NIC Conveyances):</b>				<b>60,100.00</b>	<b>2,877.00</b>

## 1.2 Study Parameters

This servicing assessment is based on:

- Stormwater Management Criteria, August 2012, TRCA.
- Peel Region Design Criteria (watermain and sanitary sewer), Region of Peel.
- Transportation and Works Department Requirements Manual, City of Mississauga.
- Plan and Profile and Sewershed Drawings, Region of Peel.
- MOE Design Guidelines for Drinking-water Systems, 2008.
- Architectural and Landscape Inputs, by SvN Architects + Planners.





### SITE LOCATION PLAN



DEVELOPMENT PROJECT  
AT MATTAWA AVENUE AND DUNDAS STREET EAST

MISSISSAUGA, ONTARIO

DRAWING BY: HK

CHECKED BY: DL

SCALE: N.T.S.

DATE: OCTOBER 2021

PROJECT NO.:  
**20129**

FIGURE NO.:  
**1**



## 2.0 WATER SUPPLY

### 2.1 Existing Water Supply

The adjacent municipal roadways contain available watermain servicing, as follows:

- Mattawa Avenue: 300mm diameter watermain.

A number of fire hydrants exist along Mattawa Avenue and are all connected into the existing 300mm diameter watermain. The existing development is currently serviced from the 300mm diameter watermain.

### 2.2 Proposed Water Supply

The proposed development is proposed to have multiple watermain connections into the existing 300mm diameter watermain in Mattawa Avenue. No mainline extensions are required to service the lands. The final number of block level connections will be determined at the Site Plan Approval stage of the project. For the purpose of fire flow and domestic demand calculations, demands have been calculated on a block-by-block basis (i.e. a calculation for each of A, C, E, F and G).

The available municipal servicing should satisfy maximum day plus fire flow or the peak hour demand, whichever is greater. Fire demand is calculated using the Fire Underwriter Survey ('FUS') guidelines (1999).

Domestic water demands for the various blocks were calculated using Region of Peel criteria and by calculating equivalent populations by type of housing and land use and applying the multi-unit per capita demand of 280 l/cap/day for residential use. Given that the number of employees for retail space is not known, instead of the 300 L/employee/day rate prescribed in the Region guidelines, an MECP rate of 28 m<sup>3</sup>/floor ha/day was used.



Fire flows were estimated using FUS methodology. The following considerations were made as part of estimating fire flows:

- Fire Resistive type of construction for all buildings except townhouses, including adequately protected vertical openings.
- Ordinary Construction type construction for the townhouse blocks.
- Construction content factor for any blocks containing retail, otherwise, Limited Combustible factor.
- All system type reductions in place.

For Block F, townhouse block F-TH2 governed the fire flow demand using different floor areas.

**Table 2: Summary of Water Demands**

Location	Daily Water Demand (L/sec)	Max Day Water Demand (L/sec)	Peak Hour Water Demand (L/sec)	Fire Demand Required (L/sec)	Max Day plus Fire Demand (L/sec)
A	7.41	14.80	22.24	150.00	164.80
C	3.28	6.54	9.83	100.00	106.54
E	3.92	7.79	11.75	166.67	<b>174.46</b>
F	3.11	6.21	9.33	150.00	156.21
G	4.12	8.22	12.36	133.33	141.55

As such, the governing maximum day plus fire flow demand rate is **174.46 L/s**.

A hydrant flow test was completed on July 23, 2021 by Lozzi Aqua Check, on a fire hydrant connected into the 300mm diameter watermain in Mattawa Avenue. The results of the test indicate that a flow rate of **441.34 L/s** could be achieved at a minimum fire pressure of 140 kPa (20 psi), which is greater than the governing block demand. As such, the municipal watermain system can accommodate the proposed development. Multi-use demand tables have been included in **Appendix C**. Refer to **Appendix B** for all water demand calculations.



### 3.0 GROUNDWATER MANAGEMENT

Discharge of groundwater and foundation drains to municipal sewers must be in accordance with the Region of Peel and/or City of Mississauga requirements. A Permit to Take Water (PTTW) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) is required for short term water taking over 400 m<sup>3</sup>/day. An Environmental Activity and Sector Registry (EASR) is required from the MECP for short term water taking between 50 m<sup>3</sup>/day and 400 m<sup>3</sup>/day. A PTTW is required for long term water taking from a permanent drainage system greater than 50 m<sup>3</sup>/day.

The hydrogeological report, prepared by Terrapex, provides high level estimates of construction (short-term) and permanent (long-term) dewatering, based on various block sizes and their levels of underground parking. The rates are as follows:

**Table 3: Groundwater Discharge Summary**

Block (m <sup>2</sup> )	Construction Dewatering (L/day)			Long-Term Dewatering (L/day)
	Temporary	25mm Storm	Total	
+/- 3,300 (2 Levels)	13,000	82,500	95,500	12,000
+/- 10,350 (2 Levels)	47,400	258,750	306,150	41,778
+/- 15,000 (3 Levels)	57,786	375,000	432,786	57,786

Construction dewatering will be designed by a qualified dewatering contractor, with MECP permitting applied for as required (EASR is expected). A rate of 57,786 L/day (**0.67 L/s**), as a conservative estimate for the largest permanent long term dewatering rate by block, should be easily managed through discharge to the sewer system, subject to approval from the Region of Peel and/or City of Mississauga. It is our understanding that the Region of Peel will soon not permit groundwater connections into their sanitary sewer system. Should this occur, either the owner will be required to design without foundation drains, or will be required to treat, control and discharge groundwater to the City's storm sewer system, in accordance with City requirements, City bylaw 0046-2022, and the control requirements outlined in Section 5.0 of this report. The method of treatment will be determined at the site plan stages of each development block.



## 4.0 SANITARY SERVICING

### 4.1 Existing Sanitary Servicing

The adjacent municipal roadways contain available separated sanitary servicing, as follows:

- Mattawa Avenue: 250mm diameter sanitary sewers.

It is our understanding that the Region will be undertaking a project that will propose a new 1200mm diameter trunk sewer in Mattawa Avenue, spanning from Dundas Street East to the existing trunk connection point at the railway bridge overpass. The existing 250mm diameter local sewers in Mattawa Avenue will remain in place, however they will be connected into this new trunk sewer in Mattawa Avenue. The continuation of the trunk sewer will require a new easement on the subject lands (within Block B).

The 250mm diameter sewers along Mattawa Avenue converge with the 1200mm diameter trunk sewer at the location where Mattawa Avenue takes a 90-degree turn, situated at the southern end of the property. The existing 300mm diameter sanitary sewer was plugged and abandoned at EX. SAN MH17 and connects to EX. SAN MH16 via a 300mm diameter pipe (Refer to Site Servicing Plan SP-2 for details). From this juncture, the sewers proceed in a southwest direction through an easement on the private property, and then head southeast in parallel with Little Etobicoke Creek

The existing site is currently serviced by the Mattawa Avenue sanitary sewer. Based on an estimated 1.55 ha of existing retail/commercial space, the existing sanitary peak flow has been estimated to be **2.92 L/s**. Refer to **Appendix C** for sanitary calculations.



## 4.2 Proposed Sanitary Servicing

All development blocks are proposed to be serviced by the existing 250mm diameter sanitary sewers in Mattawa Avenue. An extension of the sewer at the north-east part of Mattawa Avenue will be required to service Blocks A and E. For the purposes of re-zoning, we have provided one (1) control maintenance hole per block to satisfy building code requirements. Additional service connections for individual buildings within each block may be necessary, but the details will be finalized during the Site Plan Approval stage. The control maintenance hole allocated to each building is in **Table 4** below.

**Table 4: Servicing Connections per Block**

Block	San. Control MH	Stm. Control MH
A	MH1A	MH1
B	n/a	MH7
C	MH5A	MH3
E	MH3A	MH2
F	MH4A	MH4
G	MH6A	MH8
ROW 2	n/a	MH5

The unit count and non-residential floor areas have been determined on a block-by-block basis. A more detailed breakdown for individual buildings within each block will also be finalized and considered during the Site Plan Approval stage. As such, for the purpose of capacity assessment, we have calculated peak flows generated by each block. Multi-use demand tables were also prepared by block and are included in **Appendix C**.

In accordance with the Region criteria, person per unit rates of 1.7, 3.1 and 3.4 were used for small apartment units ( $\leq 1$  bedroom), large apartment units ( $> 1$  bedroom) and townhouse units. 50 persons per hectare was used to calculate equivalent population



from commercial areas. Based on these equivalent populations and generation rates of 290/cap/day for residential and 270 L/emp/day, peak flows by block are presented below in Table 5. The cumulative peak flow from each block has been calculated to be **80.74 L/s**, or an increase of **77.82 L/s**. Refer to drawing **SP-1** and **SP-2** for the location of servicing connections and **Appendix C** for sanitary calculations and multi-use demand sheets.

**Table 5: Sanitary Peak Flow Summary**

Locations		Domestic Flows			Infiltration Flows		Totals
Area	Ctrl. MH Connections	Total Units	Total Population	Domestic Flows (L/s)	Site Area (ha)	Infiltration Flows (L/s)	Total Flow (L/s)
Block A	1A	1041	2281	<b>27.11</b>	1.06	0.28	<b>27.38</b>
Block C	5A	427	940	<b>12.04</b>	0.63	0.16	<b>12.20</b>
Block E	3A	515	1119	<b>14.15</b>	1.28	0.33	<b>14.48</b>
Block F	4A	379	893	<b>11.48</b>	1.23	0.32	<b>11.80</b>
Block G	6A	515	1182	<b>14.88</b>	1.13	0.00	<b>14.88</b>
<b>TOTALS - Summation by Block:</b>		2877	6415	<b>79.65</b>	5.32	1.09	<b>80.74</b>

Typically, the Region of Peel will analyze the capacity of the existing sewer system to determine if the development can be supported without upgrades. A sanitary sewer analysis was also conducted to investigate the capacity of existing sanitary sewers downstream of the development blocks on Mattawa Ave. After considering flows from the proposed development and adjacent property to the southeast of Mattawa Ave, it was determined that four (4) segments of the existing sanitary sewer pipes will require an upgrade in diameter, while maintaining the existing pipe slopes. These upgrades involve the four existing sewer segments downstream of Region of Peel MH 1786069, requiring an increase in size to 300mm and 375mm, as depicted in drawing **SP-2**.

Refer to **Appendix C** for detailed sewer capacity and sanitary demand calculations.



## 5.0 STORMWATER SERVICING

### 5.1 Existing Stormwater Drainage

The existing Mattawa Avenue right-of-way contains an available storm sewer system that collects and conveys drainage towards the south. The site is tributary to Little Etobicoke Creek. The entire site eventually drains towards the creek and is therefore considered to have one outlet. See drawings **SWM1A** and **SWM1B** for the Pre-Development Drainage Plans. Areas 100 and 101 represent existing developed areas that are captured in existing private site services and conveyed to Mattawa Avenue. R100 is the existing Mattawa Avenue right-of-way, while the remaining areas are uncontrolled. All flows being conveyed on-site and within Mattawa Avenue are directed towards a 1200mm storm sewer that drains northeast to southwest towards Little Etobicoke Creek.

In accordance with TRCA criteria for the Etobicoke Creek Watershed, VO6 software has been utilized to calculate pre-development peak runoff for the 2-year up to the 100-year storm event based on the 12-hour AES design storms. The results have been shown below in **Table 6**. Since Mattawa Avenue, which is represented as Area R100, is an existing right-of-way, it has been excluded from the model for the stormwater management calculations. Refer to **Appendix D** for the VO6 Model output, pre-development condition analysis. No information is available for any existing controls on the developed lands and therefore have been assumed to be uncontrolled for the purpose of the analysis.





**Table 6: Overall Site Pre-Development Peak Flows**

Return Period	Total Site to Little Etobicoke Creek (L/s)
<b>(AES 12-hours)</b>	
2-Year	342
5-Year	458
10-Year	539
25-Year	642
50-Year	717
100-Year	792

## **5.2 Proposed Storm Servicing**

Each development block will require a minimum of one storm connection to the existing sewers in Mattawa Avenue. Further consultation with City of Mississauga staff is required to determine the number of required connections to each block/tower in order to meet Ontario Building Code requirements. Refer to **Table 4** for a summary of control maintenance holes and the blocks they service and drawing **SP-1** and **SP-2**.

## **5.3 Stormwater Management Criteria**

The stormwater management design has been prepared in accordance with the criteria of the City of Mississauga (City) and the Toronto and Region Conservation Authority (TRCA).

### **5.3.1 City of Mississauga Stormwater Management Criteria**

The City's SWM criteria is set out in the Transportation and Works Department Requirements Manual (Manual) dated November 2020.



#### 5.3.1.1 Water Balance

- The minimum on-site runoff retention requires the proponent to retain the first 5mm of runoff on-site, which equates to about 50% of the total average annual rainfall volume, through infiltration/bioretention, evapotranspiration and/or rainwater reuse.

**At a minimum, all runoff from a 5mm event will be retained on site through initial abstraction, infiltration, evapotranspiration and/or rainwater reuse.**

#### 5.3.1.2 Water Quality

- Require average removal of 80% of TSS on an annual loading basis from all runoff leaving the site. (Suspended solids removal efficiency is to be calculated based on 100% of the total runoff volume resulted from all storm events that occur in an average year.)
- Overall efficiency in TSS removal can be considered in combination with minimum on-site runoff retention and other conveyance & end-of-pipe controls (i.e. the treatment train).

**A TSS removal of 80% is required, calculated based on a treatment train approach.**

#### 5.3.1.3 Water Quantity

- Stormwater quantity control varies depending on the watershed and should conform to the criteria set out by the corresponding conservation authority (ie. TRCA, CH and CVC) based on the watershed.

**The quantity controls shall achieve TRCA quantity control requirements.**

#### 5.3.2 TRCA Criteria

As the site is located within the Etobicoke Creek watershed, the TRCA's Stormwater Management Criteria dated August 2012 have been assessed for requirements that are



additional to the City criteria. From Table 2.2 and Table 3-1, the criteria as it applies to this development as follows:

### 5.3.2.1 Stormwater Quantity

For Etobicoke Creek, control post-development peak flows to the Etobicoke Creek Watershed delineated unit rates for all storms up to and including the 100-year storm (i.e. 2, 5, 10, 25, 50, and 100-year storms). The site is in the Little Etobicoke Creek tributary and the specific unit release rates for the site's location are found in Table I1 of Appendix A in the TRCA Stormwater Management Criteria. The applied unit release rates and the site's resulting allowable rates are shown in **Table 7**.

**Table 7: TRCA Allowable Unit Rates Flows for the Site**

Return Period	Unit Runoff Rates (L/s/ha)	Total Site Allowable Release Rates (L/s)
2-Year	21.5	139.8
5-Year	33	214.6
10-Year	41	266.6
25-Year	55	357.6
50-Year	62.7	407.7
100-Year	71.8	466.9

The TRCA unit release rates in **Table 7** result in small release rates, which are less than pre-development conditions rates even for landscaped areas. As such, the TRCA rates will govern quantity control release rates for the site. The return period peak flows are based on the 12-hour AES design storm events. Refer to **Appendix D** for further information on TRCA's Little Etobicoke Creek watershed Criteria and unit release rate calculations. The total site area release rates are based on the limits of the storm drainage areas of the development blocks.



**Control the site's post-development peak flows to the TRCA's Little Etobicoke Creek Watershed defined unit rates for all storms up to and including the 100-year storm.**

#### **5.3.2.2 Erosion**

- At a minimum retain 5 mm on site where conditions do not warrant the detailed analyses.
- If a site drains to a sensitive creek or a sub watershed, a study or MESP is required, then the proponent must complete a geomorphologic assessment study to determine the site appropriate erosion threshold.
- For sites with SWM ponds, 25mm - 48hr detention may also be required, depending on the results of the erosion assessment.

The proposed development does not meet the criteria requiring erosion control and we believe there will be no measurable impact on erosion in the Little Etobicoke Creek.

**The site shall apply best efforts to retain 5mm of runoff depth.**

#### **5.3.2.3 Stormwater Quality**

Enhanced Level of Protection (80% TSS removal) as per the latest MOE SWMPD Manual is required.

**TSS removal of 80% is required.**

#### **5.3.2.4 Water Balance**

- For Low Volume Groundwater Recharge Areas (LGRA), site specific water balance analyses are typically not required, and best efforts to maintain recharge are expected.



- For natural features (woodlands, wetlands, watercourses) maintain hydrologic regimes and hydroperiods.

**Reasonable best efforts to maintain or enhance groundwater recharge.**

**5.3.3 Consolidated Stormwater Criteria**

**Table 8** below presents the consolidated City and TRCA criteria.

**Table 8: Consolidated Stormwater Management Criteria**

Criteria	City	TRCA
<b>Water Balance</b>	All runoff from a 5mm event will be retained on site through infiltration, evapotranspiration & rainwater reuse.	Reasonable best efforts to maintain or enhance groundwater recharge.
<b>Stormwater Quality</b>	TSS removal of 80% is required.	TSS removal of 80% is required.
<b>Stormwater Quantity</b>	The post-development peak runoff rates shall conform to TRCA criteria. Overland flow route to safely convey major drainage to municipal right-of-way.	Control post-development peak flows to the TRCA's Little Etobicoke Creek watershed defined unit rates for all storms up to and including the 100-year storm.
<b>Erosion Control</b>	Not Required.	Retain 5mm on site

**5.4 Proposed Stormwater Management Approach**

A hierarchical approach has been used to arrive at the proposed stormwater management strategy for this development. Consistent with this approach, it is proposed that all the



development blocks will have internal treatment and control facilities that will fully address the water balance, quality treatment and quantity control requirements for the individual blocks. Refer to drawings **SWM2A** and **SWM2B** for the Post-Development Drainage Plans. The sum of the limits of the development block drainage areas have been considered as the total site area for the purposes of the stormwater management calculations. Since Mattawa Avenue is an existing public road, the drainage patterns of the road will generally be maintained and have been excluded from stormwater management calculations. However, a road widening is proposed on Mattawa Avenue, therefore the additional widening area has been accounted for by including those widened areas in the individual development blocks as a conservative approach. External drainage area has also been included within the model but are not considered with respect to quantity, quality, and water balance. The site also includes a Park Block (Area 214) and a block allocated for a future right-of-way bridge (R201) that crosses over Little Etobicoke Creek. These two blocks will be public areas and shall be uncontrolled, however they were accounted for as part of the overall stormwater management approach. The private development blocks shall implement additional quantity controls to compensate for the released flows for the two public blocks to ensure that the total site released flows achieve allowable release rates. Quality control for the roads will be addressed with a treatment train approach of directing runoff from impermeable areas to landscaped areas where feasible, retaining the 5mm storm event within the blocks, and an oil/grit separator ('OGS') unit at the connection of each of the blocks. Based on the proposed plan, preliminary sizing of the storm water management facilities was completed for each development block. The detailed design of these facilities will occur as part of the future Site Plan Approval process for the development blocks.

#### 5.4.1 Residential/Retail Blocks with Underground Garages

The stormwater management requirements for these blocks will be met using a combination of green roofs/landscaping, rainwater harvesting and quantity control cisterns and oil/grit separators.



**Water Balance** – It is proposed that all rainfall events up to the 5mm storm will be retained on site for these blocks. This will be done through the use of green roofs/landscaping and rainwater harvesting. Harvested rainfall will be stored in underground garage cisterns and be used for irrigation purposes. Refer to **Table 9** and **Appendix D** for detailed calculations.

**Water Quality** - Oil/grit separators will provide 50% treatment for roof, exposed parking areas and driveways. Landscaped areas will be conveyed directly to a rainwater cistern. A level of 80% or more TSS removal will be achieved for blocks based on 100% of the total runoff volume resulted from all storm events that occur in an average year. Refer to **Table 10** and **Appendix D**, Water Quality for detailed calculations.

**Water Quantity** – The proposed 2 to 100-year storms will be controlled to allowable rates (using TRCA defined unit rates for the Little Etobicoke Creek watershed) with implementation of underground garage cisterns/storage facilities with Hydrovex units or orifice plates. See **Table 11** and **Appendix D** for calculations. The private development blocks shall overcontrol the release rates in order to compensate for the uncontrolled future right-of-way bridge (Area R201) and the public park block.

**SWM DESIGN CALCULATIONS**  
**Table 9: Water Balance Summary Table (Post-development)**

**Project Name:** 1580-1590 & 1650 Dundas Street East  
**Municipality:** Mississauga, ON  
**Project No.:** 20129  
**Date:** 25-Oct-23

**Prepared by:** P.T.  
**Checked by:** Y.K.  
**Last Revised:** 25-Oct-23

Block	Area (ha)	Imperviousness (%)	Volume Required For 5mm Retention Over Impervious Area (m3)
<b>BLOCK A</b>	1.057	88%	46
<b>BLOCK E</b>	1.278	87%	55
<b>BLOCK C</b>	0.621	81%	25
<b>BLOCK F</b>	1.232	85%	52
<b>BLOCK G</b>	1.126	91%	52
<b>PARK BLOCK</b>	1.029	0%	0
<b>Sub-Total</b>	<b>6.343</b>	<b>73%</b>	<b>230</b>



**SWM DESIGN CALCULATIONS**  
**Table 10: Post-development TSS Removal Calculation Results Summary (using New Jersey Stormwater Best Management Practices Manual , Chapter 4 - TSS Removal Rates for BMP's in Series)**

Project Name: 1580-1590 & 1650 Dundas Street East  
Municipality: Mississauga, ON  
Project No.: 20129  
Date: 25-Oct-23

Prepared by: P.T.  
Checked by: Y.K.  
Last Revised: 25-Oct-23

**TSS Removal Treatment Train Approach**

Block	Area (ha)	Stage 1. Land Use (% of area) for TSS Removal Credits					Stage.3 End of Pipe Quality Treatment					TSS Removal Credit Per 6.5ha Entire Site
		Landscape / Permeable Pavement (80% TSS Removal Credit)	Roof (80% TSS Removal Credit)	Paved (0% TSS Removal Credit)	Total On-site TSS Removal Credit	Remaining Untreated TSS	5mm Retention (50% TSS Removal Credit*)	Cumulative On-site TSS Removal Credit	Remaining Untreated TSS	OGS (50% TSS Removal Credit)	Complete TSS Removal Individual	
BLOCK A	1.057	12%	67%	20%	64%	36%	50%	82%	18%	50%	91%	14.8%
BLOCK E	1.278	13%	57%	29%	56%	44%	50%	78%	22%	50%	89%	17.5%
BLOCK C	0.621	19%	50%	31%	55%	45%	50%	78%	22%	50%	89%	8.5%
BLOCK F	1.232	15%	54%	31%	56%	44%	50%	78%	22%	50%	89%	16.8%
BLOCK G	1.126	9%	64%	28%	58%	42%	50%	79%	21%	50%	89%	15.5%
PARK BLOCK	1.029	100%	0%	0%	80%	20%	0%	80%	20%	0%	80%	12.7%
R201	0.160	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0.0%
<b>Sub-Total</b>	<b>6.50</b>											<b>86%</b>

\*5mm water retention is equivalent to 50% of annual rainfall. Therefore, removing this volume from hydrologic cycle reduces TSS load by 50%.

Reference: **New Jersey Stormwater Best Management Practices Manual**  
**Chapter 4 - TSS Removal Rates for BMP's in Series**

**SWM DESIGN CALCULATIONS**  
**Table 11: Water Quantity Calculation Results Summary (SWM Matrix)**

**Project Name:** 1580-1590 & 1650 Dundas Street East  
**Municipality:** Mississauga, ON  
**Project No.:** 20129  
**Date:** 25-Oct-23

**Prepared by:** P.T  
**Checked by:** Y.K.  
**Last Revised:** 25-Oct-23

Block	Drainage Area [ha]	Total Roof Area (ha)	Roof Drain to Grass (ha)	Imp. Side Walk Drain to Grass (ha)	Roof / Imp. Drain to Grass (%)	Green Roof (ha)	Green Roof (% of Roof)	Paved Surface Impervious Area (ha)	Landscape / Permeable Pavement (ha)	Imperviousness (%)	X-Imperviousness (%)	Water Balance Target (mm)	Quantity Control Target	Water Balance/Cistern Storage Required (m <sup>3</sup> )	Quantity Control Storage Utilized during 100-year storm (m <sup>3</sup> )	Blocks Target 100-year Release Rate (l/s)	VO6 Model 100-year Blocks Release Rate (l/s)	Quantity Storage Provided (m <sup>3</sup> )
<b>BLOCK A</b>	1.057	0.711	0.00	0.000	0	0.000	0%	0.214	0.132	88	88	5	TRCA Unit Release Rates	46	598	57	33	600
<b>BLOCK E</b>	1.278	0.730	0.00	0.000	0	0.000	0%	0.377	0.172	87	87	5	TRCA Unit Release Rates	55	746	71	34	755
<b>BLOCK C</b>	0.621	0.310	0.00	0.000	0	0.000	0%	0.191	0.120	81	81	5	TRCA Unit Release Rates	25	320	35	27	325
<b>BLOCK F</b>	1.232	0.667	0.00	0.000	0	0.000	0%	0.377	0.188	85	85	5	TRCA Unit Release Rates	52	779	68	19	785
<b>BLOCK G</b>	1.126	0.718	0.00	0.000	0	0.000	0%	0.313	0.096	91	91	5	TRCA Unit Release Rates	52	582	60	37	590
<b>ROW R201</b>	0.160	0.000	0.00	0.000	0	0.000	-	0.160	0.000	100	100	N/A	Uncontrolled	-	-	-	33	-
<b>PARK BLOCK</b>	1.029	0.000	0.00	0.000	0	0.000	-	0.000	1.029	0	0	N/A	Uncontrolled	-	-	-	132	-
<b>SubTotal (excluding external areas)</b>	<b>6.503</b>	<b>3.14</b>				<b>0.00</b>		<b>1.63</b>	<b>1.74</b>					<b>230</b>	<b>3025</b>	<b>291</b>	<b>315</b>	<b>3055</b>



## 5.5 Consolidation of Stormwater Management Approach

In this section of the report, the results from overall proposed development are consolidated and it is demonstrated that the proposed stormwater management approach meets or exceeds the criteria of the City and TRCA for the overall site.

### 5.5.1 Consolidated Water Balance Control

As shown in **Table 9**, the proposed Stormwater Management Approach will retain at least 5mm of rainfall on site. Refer to **Table 9** and **Appendix D** for more detail. **Table 12** summarizes the consolidated water balance outcome for the entire site.

**Table 12: Consolidated Water Balance Summary for Entire Site**

SWM Item	Target
Water Balance	5mm Retained on Site

### 5.5.2 Consolidated Water Quality Control

As shown in **Table 10**, the proposed Stormwater Management Approach will provide an overall 88% of TSS removal for the entire site. Therefore, the 80% TSS removal requirement has been satisfied. Refer to **Table 9** and **Appendix D** for more detail. **Table 13** below summarizes the consolidated water quality outcome for the entire site.

**Table 13: Consolidated Water Quality Summary for Entire Site**

SWM Item	Target	Post-Development
Water Quality	80% TSS Removal	88% TSS Removal



### 5.5.3 Consolidated Water Quantity Control

#### 5.5.3.1 Design Criteria

As previously discussed, all development blocks will provide their own quantity storage to control post-development 2-year to 100-year storm flows to the TRCA allowable unit release rates or less. This will also satisfy the City's quantity control requirement for the individual development blocks.

#### 5.5.3.2 Modeling

The following section provides detail of criteria and data which have been utilized in the modeling process:

The VISUAL-OTTHYMO Version 6 (VO6) Model has been employed to analyse the 2 to 100-year storm events for both pre-development and post-development conditions. The design storm events used in this analysis are based on the 12-hours AES storm events in accordance with the TRCA guidelines for the watershed. The 2-year to 100-year storm events were modelled with a time step of 5 minutes.

The proposed site development drainage areas have been modelled in VO6 using the STANHYD commands with the SCS Formula for areas with impervious areas, and NASHYD commands with CN values for landscaped and undeveloped areas. In the post-development conditions, flows from the individual development blocks have been routed through underground storage tanks on each block. The ROUTE RESERVOIR command has been used to model the SWM storage tanks. Refer to **Appendix D** for post-development VO6 model schematic and calculations, and drawings **SWM2A** and **SWM2B** for post-development drainage areas. The post-development VO6 model input parameters have been summarized in **Table 14**.

The required quantity storage for all development blocks have been provided in **Table 11**. For the current submission, it has been assumed that each of the development blocks shall have a single flow restriction device (orifice or vortex unit) to control all the design



storms from the 2-year to the 100-year storm event. Therefore, the development block controls have been preliminarily sized to control the 100-year storm event to the 2-year allowable release rate for the controlled portions of the blocks. However, during detailed design of the development blocks, there is opportunity to optimize the required storage volume and detention time within the stormwater storage tanks by providing a more efficient outlet, such as a multi-staged outlet. The current storage volumes provide a more general approach to the quantity controls. Refer to **Appendix D** for details and VO6 modeling used to arrive at these storage volumes.

The results of the consolidated water quantity modeling for the site outlet to Little Etobicoke Creek has been summarized in **Table 15** below. As seen in the table, all total post-development flows have been controlled down to the allowable release rates or less. Quantity controls are therefore achieved.

Any overland flows exceeding minor system capacity will be conveyed safely downstream through Mattawa Avenue and towards the existing Loreland Avenue right-of-way. The overland flows include emergency and/or uncontrolled flows from the blocks, park and open space areas, which would not be captured by minor system.



**Table 14: VO6 Modelling Parameters (Post-Development)**

Block ID	Area ID	VO6 Command	Area (ha)	IMP	CN
Block A (202)	202	STANHYD	0.711	0.99	85
Block A (202A)	2022	STANHYD	0.091	0.87	85
Block A (U202)	2021	STANHYD	0.041	0.99	85
Block A (209)	209	STANHYD	0.202	0.40	85
Block C (207)	207	STANHYD	0.310	0.99	85
Block C (207A)	2071	STANHYD	0.085	0.72	85
Block C (U207)	2072	STANHYD	0.037	0.69	85
Block C (215)	215	STANHYD	0.310	0.58	85
Block E (200)	200	STANHYD	0.441	0.67	85
Block E (201)	201	STANHYD	0.729	0.99	85
Block E (201A)	2011	STANHYD	0.091	0.69	85
Block E (U201)	2012	STANHYD	0.035	0.99	85
Block F (203)	203	STANHYD	0.147	0.34	85
Block F (204)	204	STANHYD	0.169	0.99	85
Block F (205)	205	STANHYD	0.237	0.99	85
Block F (206)	206	STANHYD	0.498	0.99	85
Block F (206A)	2061	STANHYD	0.060	0.69	85
Block F (210)	210	STANHYD	0.131	0.73	85
Block G (208)	208	STANHYD	0.048	0.34	85
Block G (211)	211	STANHYD	0.097	0.99	85
Block G (212)	212	STANHYD	0.190	0.90	85
Block G (213)	213	STANHYD	0.621	0.99	85
Block G (213A)	2131	STANHYD	0.141	0.67	85
Future ROW (R201)	2201	STANHYD	0.160	0.99	85
Park Block Pervious (214)	2141	NASHYD	1.029	-	85
Block E (EXT1)	199	STANHYD	0.088	0.62	85
Block F (EXT1A)	82	NASHYD	0.037	-	85
Block G (EXT1B)	86	NASHYD	0.013	-	85
EXT2	1003	NASHYD	0.029	-	85



**Table 15: Consolidated Water Quantity Peak Flows Summary (L/s)**

Location	Return Period	Total Pre-Development Flows* (L/s)	TRCA Unit Release Rates (L/s)	Total Post-Development Flows (L/s)
<i>Entire Site (To Little Etobicoke Creek)</i>	2-Year	342	139.8	85
	5-Year	458	214.6	118
	10-Year	539	266.6	141
	25-Year	642	357.6	170
	50-Year	717	407.7	192
	100- Year	792	466.9	214

\* Includes all external areas draining through the site.

## 5.6 Low Impact Development Measures

The underground structure levels of the various development blocks encompass the majority of the available private block areas. As such, there are no viable locations to implement low impact development ('LID') measures that are of the infiltration types.

However, the landscape architect has proposed LID's that will inherently improve stormwater management, as follows:

- **Green Roof Systems:** allow for absorption, detention and evapotranspiration of stormwater.
- **Rain Gardens:** provide bioretention and filtration of stormwater prior to entering the building plumbing system or municipal sewer system.
- **Rainwater Harvesting:** reuse of stormwater through irrigation means and will likely achieve the majority of the 5mm water balance target at block level design.

All LID's will be designed at the site plan approval stage of the project.



## 6.0 CONCLUSIONS

This FSSR presents a site servicing strategy for the proposed development that addresses the requirements of the applicable regulatory agencies.

Sincerely,

Counterpoint Engineering Inc.



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## **APPENDIX 'A'**

### **Architectural Inputs**

Dundas + Mattawa Stats Summary - 2023-09-29 Issued for Coordination

Table with columns for sm, sf, % gross site. Rows include: TOTAL GROSS SITE AREA (73,888 sq m / 795,323 sq sf), SITE AREA DEDUCTIONS (10,460 sq m / 112,590 sq sf), PARK (10,290 sq m / 110,761 sq sf), OPEN SPACE (6,960 sq m / 74,917 sq sf), FUTURE ROAD (1,600 sq m / 17,222 sq sf), ROAD WIDENING AREA (1,510 sq m / 16,253 sq sf), ROADS (390 sq m / 4,198 sq sf).

Table with columns for sm, sf. Rows include: TOTAL NET DEVELOPMENT SITE AREA (53,138 sq m / 571,972 sq sf), AREA SUMMARY (220,012 sq m / 2,368,187 sq sf), TOTAL GFA (ALL USES) (220,012 sq m / 2,368,187 sq sf), TOTAL GFA (RESIDENTIAL) (211,994 sq m / 2,281,886 sq sf), TOTAL GFA (RETAIL + COMMUNITY) (6,460 sq m / 69,535 sq sf), TOTAL LOT COVERAGE (31,522 sq m / 339,303 sq sf).

Table with columns for Overall FSI (4.14) and Total Residential Units (2,877).

Table with columns for Total Parking Spaces (2,453), Residential Spaces (2,010), and Visitor/Commercial Spaces (443).

Summary table for blocks A through G and TOTAL. Columns include sm, sf for each block and totals. Rows include Lot Area, Residential GFA, Retail GFA, Community GFA, Total GFA, FSI, Lot Coverage, and Landscaping.

Landscaping table with columns for Area and Percentage for blocks A, B, C, H, E, F, G, and TOTAL. Rows include Area and Percentage values.

Table with columns for sm, sf, % gross site. Rows include: TOTAL NET DEVELOPMENT SITE AREA (53,138 sq m / 571,972 sq sf), excl. ROW, Road Widening, Hazards and Park (5.31 sq m / 13.13 sq sf).

UNIT COUNT & MIX

Table for Apartment Units and Townhouse Units. Columns include building types (A, B, C, E, F, G) and counts. Rows include ST, 1BD, 2BD, 3BD, Sub Total for both unit types.

AMENITY

Table for Amenity with columns for Building, Geodectic Height, and amenity counts. Rows include TOTAL PROVIDED AMENITY and TOTAL CONTIGUOUS AMENITY.

ESTABLISHED GRADE (m)

Table for Established Grade with columns for Building, Geodectic Height, and height values for blocks A, C, E, F, G.

HEIGHT (m)\*

Table for Height with columns for Building, Height (m), and height values for units A1, A2, A3, FTH-1, FTH-2, GTH-1.

VEHICLE PARKING

Table for Vehicle Parking with columns for Required, Provided, and counts for Resident, Commercial/Visitor, and Total.

BICYCLE PARKING

Table for Bicycle Parking with columns for Required, Provided, and counts for Long Term, Short Term, and Total.

LOADING

Table for Loading with columns for Size, Provided, and loading area counts for different dimensions.

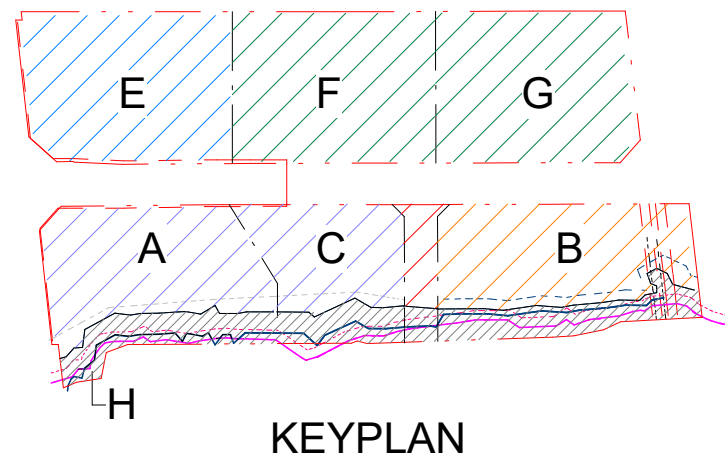
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Table with columns for NO., DATE, and REVISION/ COMMENT. Contains 2 revision entries.

NOTES



SvN logo and contact information: 110 Adelaide St. E., Toronto, ON. info@svn-ap.com, 416-593-9499.

DUNDAS & MATTAWA 1800-1850 and 1850 Dundas Street East Mississauga, Ontario Hazelview Investments

STATISTICS-SITE

Table with columns for PROJECT, SCALE, DATE, and DRAWN, CHECKED, PLOTTED dates.

**Block A - Summary Statistics**

LOT AREA	m	sf
Block A	10,870	113,774
<b>RESIDENTIAL GFA</b>	<b>70,189</b>	<b>765,505</b>
A - Podium	10,176	109,538
A1	16,280	175,237
A2	18,651	200,762
A3	25,081	269,968
<b>RETAIL GFA</b>	<b>1,271</b>	<b>13,681</b>
A - Podium	1,271	13,681

<b>TOTAL GFA</b>	<b>m</b>	<b>sf</b>
<b>TOTAL GFA</b>	<b>71,460</b>	<b>769,186</b>
City of Mississauga By Law No.029-2007	71,460	769,186
A-Podium	11,447	122,219
A1	16,280	175,237
A2	18,651	200,762
A3	25,081	269,968

<b>FSI</b>	<b>m</b>	<b>sf</b>
<b>FSI</b>	<b>6.78</b>	

<b>LOT COVERAGE</b>	<b>m</b>	<b>sf</b>
<b>LOT COVERAGE</b>	<b>7,098</b>	<b>76,406</b>
A-Podium	7,098	76,406

<b>LANDSCAPING</b>	<b>sqm</b>	<b>sqft</b>
<b>LANDSCAPING</b>	<b>3,407</b>	<b>36,868</b>
A-Podium	3,407	36,868

<b>BLOCK UNIT COUNT</b>	<b>66</b>	<b>625</b>	<b>252</b>	<b>108</b>	<b>1,041</b>	
A1	ST	180	380	380	TOTAL	
	9	139	66	24	<b>237</b>	
		3.8%	56.5%	27.7%	9.9%	100.0%
A2	ST	180	380	380	TOTAL	
	17	162	70	28	<b>278</b>	
		6.0%	56.4%	25.2%	10.0%	100.0%
A3	ST	180	380	380	TOTAL	
	24	263	90	42	<b>419</b>	
		5.8%	62.9%	21.5%	10.0%	100.0%
A Podium	ST	180	380	380	TOTAL	
	6	80	24	12	<b>103</b>	
		6.7%	56.4%	23.7%	11.8%	100.0%
A Podium - Townhouses	ST-TH	180-TH	280-TH	380-TH	TOTAL	
	0	0	2	4	<b>6</b>	
		0.0%	0.0%	50.0%	100.0%	

<b>AMENITY</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>	<b>Ratio</b>
Total req'd indoor-outdoor amenity to be provided in one contiguous area					
A-L1		820	8826		
A-L2		377	4058		
A-L3		416	4481		
A-L3 (OUTDOORS)		220	2371		
A-L10		182	1955		
A-L10 (OUTDOORS)		246	2648		
<b>A Total</b>	<b>583</b>	<b>6,208</b>	<b>6,795</b>	<b>6.78</b>	

<b>CONTIGUOUS AMENITY</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>
<b>A Total</b>	<b>2,006</b>	<b>3,262</b>	<b>35,109</b>	<b>3.13</b>

<b>OUTDOOR AMENITY AT GRADE*</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>
<b>A Total</b>	<b>55</b>	<b>89</b>	<b>958</b>	<b>0.09</b>

<b>ESTABLISHED GRADE</b>	<b>m</b>	<b>sf</b>
<b>Block A</b>	<b>118.09</b>	<b>-</b>

<b>HEIGHT</b>	<b>Measured from established grade</b>	<b>m</b>	<b>ft</b>
A1		<b>91.10</b>	<b>550</b>
A2		<b>95.90</b>	<b>1,032</b>
A3		<b>134.70</b>	<b>1,450</b>

<b>VEHICLE PARKING</b>	<b>REQUIRED</b>	<b>PROPOSED</b>
Residential		
L2	A1+A2+A3	0
GR	A1+A2+A3	0
P1	A1+A2+A3	202
P2	A1+A2+A3	226
P3	A1+A2+A3	226
Total Res.		<b>677</b>
Commercial/Visitor		
L2	A1+A2+A3	82
GR	A1+A2+A3	57
P1	A1+A2+A3	28
Total Commercial/Visitor		<b>167</b>
<b>TOTAL</b>	<b>A1+A2+A3</b>	<b>833</b>

<b>BICYCLE PARKING</b>	<b>REQUIRED</b>	<b>PROPOSED</b>
long term	A1+A2+A3	625
short term	A1+A2+A3	52
<b>TOTAL</b>	<b>A1+A2+A3</b>	<b>677</b>

<b>LOADING</b>	<b>SIZE</b>	<b>NUMBER OF SPACES</b>
TYPE C	3.5m (W) x 9.0m (L) x 4.5m (H)	1
GARBAGE	6.0m (W) x 18.0m (L) x 7.5m (H)	1

NOTE: See Report by LEA for further detail on parking and loading

**Block C - Summary Statistics**

LOT AREA	m	sf
Block C	6,270	66,844
<b>RESIDENTIAL GFA</b>	<b>28,705</b>	<b>306,981</b>
C1	28,705	306,981
<b>RETAIL GFA</b>	<b>955</b>	<b>10,380</b>
C1	955	10,380
<b>COMMUNITY GFA</b>	<b>368</b>	<b>3,940</b>
C1	368	3,940

<b>TOTAL GFA</b>	<b>m</b>	<b>sf</b>
<b>TOTAL GFA</b>	<b>31,584</b>	<b>339,966</b>
City of Mississauga By Law No.029-2007	31,584	339,966

<b>FSI</b>	<b>m</b>	<b>sf</b>
<b>FSI</b>	<b>5.09</b>	

<b>LOT COVERAGE</b>	<b>m</b>	<b>sf</b>
<b>LOT COVERAGE</b>	<b>3,097</b>	<b>33,338</b>
C1	3,097	33,338

<b>LANDSCAPING</b>	<b>m</b>	<b>sf</b>
<b>LANDSCAPING</b>	<b>3,077</b>	<b>33,118</b>
C1	3,077	33,118

<b>BLOCK UNIT COUNT</b>	<b>45</b>	<b>233</b>	<b>105</b>	<b>44</b>	<b>427</b>	
C1	ST	180	380	380	TOTAL	
	45.2	233.1	103.0	44.0	<b>425</b>	
		10.6%	54.8%	24.2%	10.0%	100.0%
C1 Podium - Townhouses	ST-TH	180-TH	280-TH	380-TH	TOTAL	
	0	0	2	0	<b>2</b>	
		0.0%	0.0%	100.0%	0.0%	100.0%

<b>AMENITY</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>	<b>Ratio</b>
Total req'd indoor-outdoor amenity to be provided in one contiguous area					
C-L2		820	8826		
C-L2 (OUTDOORS)		377	4058		
C-L3		416	4481		
C-L3 (OUTDOORS)		220	2371		
C-L10		182	1955		
C-L10 (OUTDOORS)		246	2648		
<b>C Total</b>	<b>2,387</b>	<b>25,799</b>	<b>2,419</b>	<b>26,040</b>	<b>6.66</b>

<b>CONTIGUOUS AMENITY</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>
<b>C Total</b>	<b>1,708</b>	<b>1,987</b>	<b>12,894</b>	<b>2.80</b>

<b>OUTDOOR AMENITY AT GRADE*</b>	<b>REQUIRED</b>	<b>PROPOSED</b>	<b>sqm</b>	<b>sf</b>
<b>C1</b>	<b>55</b>	<b>592</b>	<b>6,356</b>	<b>0.68</b>

<b>ESTABLISHED GRADE</b>	<b>m</b>	<b>sf</b>
<b>C1</b>	<b>117.3</b>	<b>-</b>

<b>HEIGHT</b>	<b>Measured from established grade</b>	<b>m</b>	<b>ft</b>
C1		<b>116.00</b>	<b>1,249</b>

<b>VEHICLE PARKING</b>	<b>REQUIRED</b>	<b>PROPOSED</b>
Residential		
P1	C1	53
P2	C1	181
P3	C1	156
Total Res.		<b>391</b>
commercial/visitor		
P1	C1	65
P2	C1	0
P3	C1	0
Total commercial/visitor		<b>65</b>
<b>TOTAL</b>	<b>C1</b>	<b>346</b>

<b>BICYCLE PARKING</b>	<b>REQUIRED</b>	<b>PROPOSED</b>
long term	C1	257
short term	C1	21
<b>TOTAL</b>	<b>C1</b>	<b>278</b>

<b>LOADING</b>	<b>SIZE</b>	<b>NUMBER OF SPACES</b>
TYPE C	3.5m (W) x 9.0m (L) x 4.5m (H)	1
GARBAGE	6.0m (W) x 18.0m (L) x 7.5m (H)	1

NOTE: See Report by LEA for further detail on parking and loading

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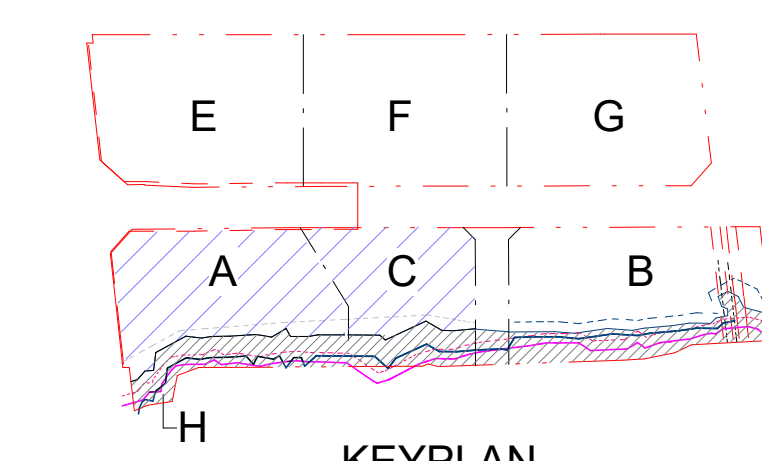
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NO.	DATE	REVISION/ COMMENT
1	2022-07-29	Issued for ZBA/OPA
2	2023-10-20	Issued for ZBA/OPA Rev-1

NO.	DATE	REVISION/ COMMENT

**NOTES**



**SVN**  
 110 Adelaide St. E. info@svm-ar.com  
 TORONTO, ON 416.392.6458  
 MSC 1K9

**DUNDAS & MATTAWA**  
 1890-1890 and 1850 Dundas Street East  
 Mississauga, Ontario  
 Hazelview Investments

**STATISTICS - BLOCKS A&C**

PROJECT	42075_1	DRAWN	SVN
SCALE	NTS	CHECKED	SVN
DATE	03/24/21	PLOTTED	2023-10-19 6:11:21 PM

**Block E - Summary Statistics**

LOT AREA	sqm	sqft
Block E	12,780	137,563
<b>RESIDENTIAL GFA</b>	<b>41,459</b>	<b>446,294</b>
E - Podium	2,965	22,225
E1	23,719	255,310
E2	15,675	168,728
<b>RETAIL GFA</b>	<b>2,086</b>	<b>22,483</b>
E-Podium	2,086	22,483

<b>TOTAL GFA</b>	<b>43,545</b>	<b>468,717</b>
City Reference per City of Mississauga Zoning By-Law No.029-2007		
E - Podium	4,381	44,679
E1	23,719	255,310
E2	15,675	168,728

<b>FSI</b>	<b>3.41</b>
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LOT COVERAGE	sqm	sqft
E Podium	8,112	87,215

LANDSCAPING	2,858	30,765
E - Podium	2,858	30,765

BLOCK UNIT COUNT	46	310	114	45	<b>515</b>
E1	ST	180	280	380	TOTAL
	14	174	57	15	<b>260</b>
	5.4%	66.9%	21.9%	5.8%	100.0%
E2	ST	180	280	380	TOTAL
	32	132	57	17	<b>238</b>
	13.3%	55.4%	24.1%	7.2%	100.0%
E Podium	ST	180	280	380	TOTAL
					<b>17</b>
	0.0%	23.5%	0.0%	76.5%	100.0%

E Podium - Townhouses	ST-TH	180-TH	280-TH	380-TH	TOTAL
	0	4	0	13	<b>17</b>
	0.0%	23.5%	0.0%	76.5%	100.0%

TOTAL AMENITY	REQUIRED	PROPOSED	RATIO		
Total req'd indoor-outdoor amenity to be greater of min. 5.0m or 5% of gross floor area					
E-L2	1,300	1,4025			
E-L2 (OUTDOORS)	1,282	1,3801			
E-L8	201	294			
E-L8 (OUTDOORS)	994	1,069			
<b>E Total</b>	<b>2,876</b>	<b>30,958</b>	<b>3,790</b>	<b>42,890</b>	<b>7.34</b>

**CONTIGUOUS AMENITY**  
min. 50% of total required amenity is to be provided in one contiguous area

<b>E Total</b>	1,438	15,479	<b>2,886</b>	27,827	5.02
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**OUTDOOR AMENITY AT GRADE**  
min 50cm to be outside of grade. Total indoor + outdoor amenity requirement of 5.0m or 5%

<b>E Total</b>	55	592	<b>1,282</b>	13,801	2.49
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**ESTABLISHED GRADE**

<b>E</b>	<b>119.55</b>	-
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**HEIGHT** measured from established grade

E1	48.88	527
E2	58.15	627

**VEHICLE PARKING** REQUIRED PROPOSED

Residential		
GR	E1+E2	0
P1	E1+E2	269
P2(half)	E1+E2	116
Total Res.	<b>334</b>	<b>385</b>
commercial/visitor		
GR	E1+E2	48
P1	E1+E2	29
P2(half)	E1+E2	0
Total commercial/visitor	<b>77</b>	<b>77</b>
<b>TOTAL</b>	<b>411</b>	<b>462</b>

**BICYCLE PARKING**

long term	E1+E2	308	352
short term		26	26
<b>TOTAL</b>	<b>E1+E2</b>	<b>334</b>	<b>378</b>

**LOADING** TYPE NUMBER OF SPACES

TYPE C	TYPE	NUMBER OF SPACES
TYPE C	3.5m (9ft) x 5.0m (15ft) x 4.5m (D8)	1
	5.0m (15ft) x 6.0m (19ft) x 4.5m (D8)	1
GARBAGE	6.0m (19ft) x 8.0m (26ft) x 7.5m (D9)	1

NOTE: See Report by LEA for further detail on parking and loading

**Block F - Summary Statistics**

LOT AREA	sqm	sqft
Block F	12,320	132,811
<b>RESIDENTIAL GFA</b>	<b>31,199</b>	<b>335,818</b>
F - Podium	1,371	14,787
F1	15,873	170,206
F2	8,281	89,141
F TH1	2,555	27,497
F TH2	3,179	34,216

<b>RETAIL GFA</b>	<b>634</b>	<b>6,824</b>
F-Podium	634	6,824

<b>TOTAL GFA</b>	<b>31,833</b>	<b>342,642</b>
City Reference per City of Mississauga Zoning By-Law No.029-2007		
F-Podium	2,005	21,582
F1	15,873	170,206
F2	8,281	89,141
F TH1	2,555	27,497
F TH2	3,179	34,216

<b>FSI</b>	<b>2.58</b>
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LOT COVERAGE	sqm	sqft
F Podium	6,299	67,800
F TH1	680	7,315
F TH2	844	9,087

LANDSCAPING	6,021	64,812
F	6,021	64,812

**BLOCK TOTAL UNIT COUNT**

F	42	178	84	75	<b>379</b>
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**UNIT COUNT**

F1	30	108	29	29	<b>196</b>
	15.2%	58.2%	14.7%	14.9%	100.0%
F2	12	70	13	12	<b>107</b>
	11.2%	65.7%	12.0%	11.2%	100.0%
<b>TOWNHOUSE UNIT COUNT</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>34</b>	<b>76</b>

**F Podium-Townhouses**

ST-TH	180-TH	280-TH	380-TH	TOTAL
0	0	10	4	<b>14</b>
0.0%	0.0%	71.4%	28.6%	100.0%

**FTH-1 Townhouses**

ST-TH	180-TH	280-TH	380-TH	TOTAL
0	0	16	15	<b>31</b>
0.0%	0.0%	51.6%	48.4%	100.0%

**FTH-2 Townhouses**

ST-TH	180-TH	280-TH	380-TH	TOTAL
0	0	16	15	<b>31</b>
0.0%	0.0%	51.6%	48.4%	100.0%

**TOTAL AMENITY** REQUIRED PROPOSED RATIO

Total req'd indoor-outdoor amenity to be greater of min. 5.0m or 5% of gross floor area

<b>F Total</b>	2,102	22,845	<b>2,143</b>	23,067	5.69
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**CONTIGUOUS AMENITY**  
min. 50% of total required amenity is to be provided in one contiguous area

<b>F Total</b>	1,041	11,423	<b>1,145</b>	12,325	3.02
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**OUTDOOR AMENITY AT GRADE**  
min 50cm to be outside of grade. Total indoor + outdoor amenity requirement of 5.0m or 5%

<b>F Total</b>	55	592	<b>994</b>	6,394	1.57
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**ESTABLISHED GRADE** measured from established grade

<b>F</b>	<b>117.67</b>	-
<b>FTH-1 + FTH-2</b>	<b>118.31</b>	-

**HEIGHT**

F1	42.04	453
F2	42.04	453
FTH-1	10.5	113
FTH-2	9.86	107

**VEHICLE PARKING** REQUIRED PROPOSED

residential		
GR		0
P1		229
P2(half)		119
Total Res.	<b>247</b>	<b>348</b>
commercial/visitor		
GR		24
P1		33
P2(half)		0
Total commercial/visitor	<b>57</b>	<b>57</b>
<b>TOTAL</b>	<b>304</b>	<b>405</b>

**BICYCLE PARKING**

long term	F1-F2	227	280
short term		19	19
<b>TOTAL</b>	<b>F1-F2</b>	<b>246</b>	<b>299</b>

**LOADING** TYPE NUMBER OF SPACES

TYPE C	TYPE	NUMBER OF SPACES
TYPE C	3.5m (9ft) x 5.0m (15ft) x 4.5m (D8)	1
	5.0m (15ft) x 6.0m (19ft) x 4.5m (D8)	1
GARBAGE	6.0m (19ft) x 8.0m (26ft) x 7.5m (D9)	1

NOTE: See Report by LEA for further detail on parking and loading

**Block G - Summary Statistics**

LOT AREA	sqm	sqft
Block G	11,260	121,202
<b>RESIDENTIAL GFA</b>	<b>42,442</b>	<b>455,318</b>
G-Podium	1,371	14,787
G1	14,179	152,825
G2	21,059	226,673
G TH1	3,178	34,206

<b>RETAIL GFA</b>	<b>1,148</b>	<b>12,387</b>
G-Podium	1,148	12,387

<b>TOTAL GFA</b>	<b>43,590</b>	<b>467,679</b>
City Reference per City of Mississauga Zoning By-Law No.029-2007		
G-Podium	3,175	34,172
G1	14,179	152,825
G2	21,059	226,673
G TH1	3,178	34,206

<b>FSI</b>	<b>3.69</b>
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LOT COVERAGE	sqm	sqft
G Podium	6,916	74,444
G TH1	844	9,087

LANDSCAPING	4,288	45,939
G1	4,288	45,939

**BLOCK TOTAL UNIT COUNT**

G1	31	282	143	53	<b>514</b>
----	----	-----	-----	----	------------

**UNIT COUNT**

G1	ST	180	280	380	TOTAL
	8	101	48	21	<b>177</b>
	4.5%	57.2%	27.2%	11.7%	100.0%
G2	ST	180	280	380	TOTAL
	23	181	54	19	<b>277</b>
	8.3%	65.2%	19.6%	6.8%	100.0%
G Podium	ST	180	280	380	TOTAL
	0	0	0	0	<b>0</b>

**G Podium - Townhouses**

ST-TH	180-TH	280-TH	380-TH	TOTAL
0	0	8	13	<b>21</b>
0.0%	0.0%	38.1%	61.9%	100.0%

**GTH1 Townhouse**

ST-TH	180-TH	280-TH	380-TH	TOTAL
0	0	39	0	<b>39</b>
0.0%	0.0%	100.0%	0.0%	100.0%

**TOTAL AMENITY** REQUIRED PROPOSED RATIO

Total req'd indoor-outdoor amenity to be greater of min. 5.0m or 5% of gross floor area

<b>G Total</b>	1,442	15,522	<b>1,813</b>	19,575	3.53
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**CONTIGUOUS AMENITY**  
min. 50% of total required amenity is to be provided in one contiguous area

<b>G Total</b>	1,442	15,522	<b>1,813</b>	19,575	3.53
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**OUTDOOR AMENITY AT GRADE**  
min 50cm to be outside of grade. Total indoor + outdoor amenity requirement of 5.0m or 5%

<b>G Total</b>	55	592	<b>1,088</b>	11,406	2.08
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**ESTABLISHED GRADE**

<b>G</b>	<b>116.34</b>	-
<b>GTH-1</b>	<b>116.75</b>	-

**HEIGHT** measured from established grade

G1	41.36	445
G2	60.46	651
GTH-1	10.50	113

**VEHICLE PARKING** REQUIRED PROPOSED

residential		
GR		0
P1		214
P2(half)		82
Total Res.	<b>335</b>	<b>296</b>
commercial/visitor		
GR		37
P1		40
P2(half)		0
Total commercial/visitor	<b>77</b>	<b>77</b>
<b>TOTAL</b>	<b>412</b>	<b>373</b>

**BICYCLE PARKING**

long term	G1+G2	309	366
short term		26	26
<b>TOTAL</b>	<b>G1+G2</b>	<b>335</b>	<b>392</b>

**LOADING** TYPE NUMBER OF SPACES

TYPE C	TYPE	NUMBER OF SPACES
TYPE C	3.5m (9ft) x 5.0m (15ft) x 4.5m (D8)	1
	5.0m (15ft) x 6.0m (19ft) x 4.5m (D8)	1
GARBAGE	6.0m (19ft) x 8.0m (26ft) x 7.5m (D9)	1

NOTE: See Report by LEA for further detail on parking and loading

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NO.	DATE	REVISION/ COMMENT
1	2022-07-29	Issued for ZBA/OPA
2	2023-10-20	Issued for ZBA/OPA Rev-1

**NOTES**

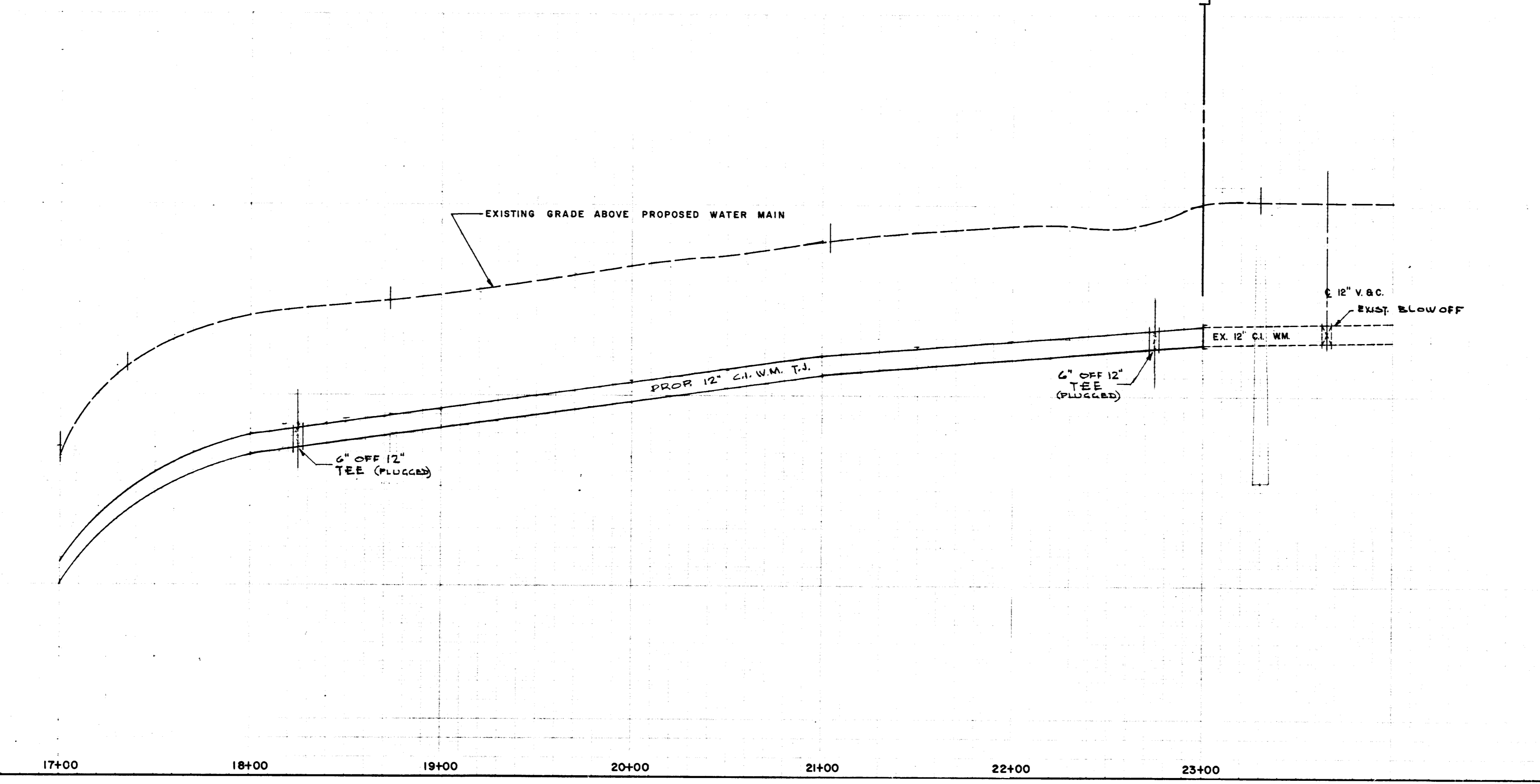
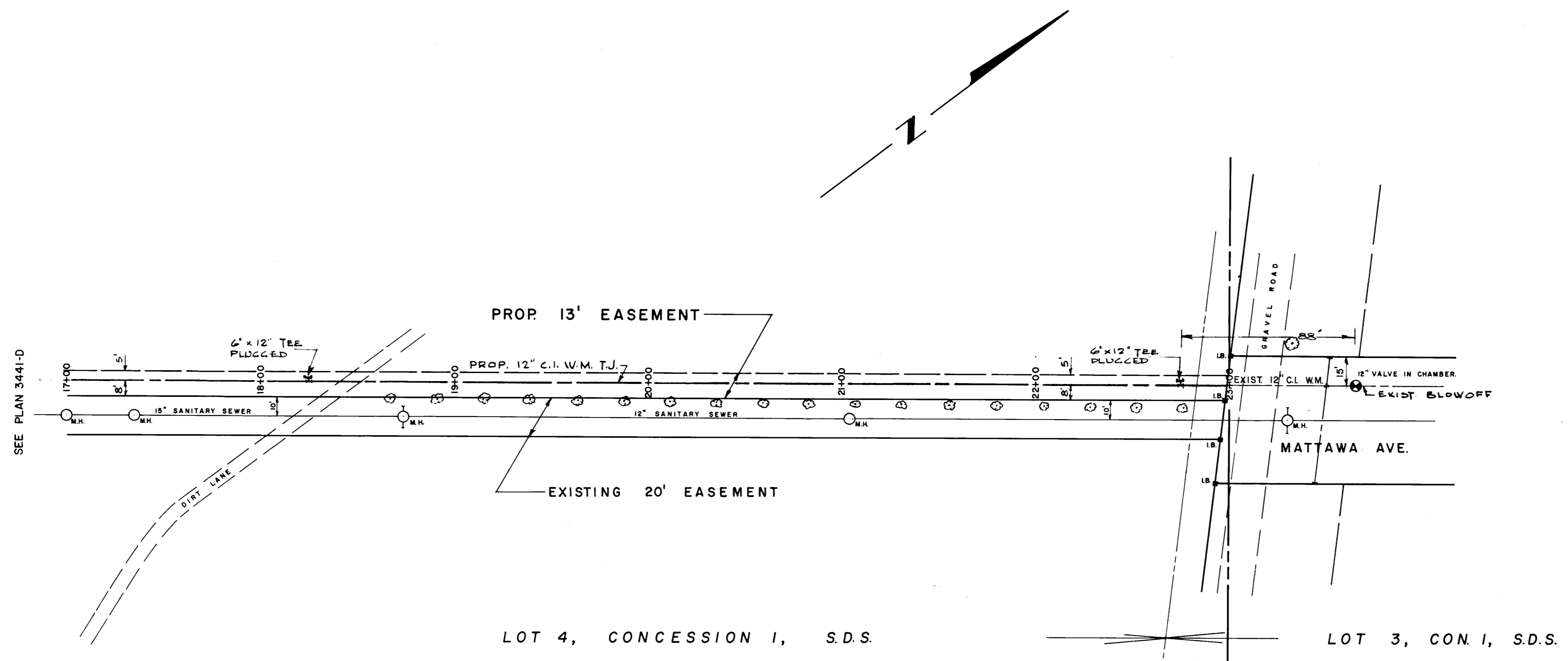
GROSS CONSTRUCTION AREAS				
BLOCK	FLOOR AREA	# OF STORIES	TOP FLOOR	TOTAL GCA (sm)
<b>Block A</b>				<b>97,935</b>
<b>Building A - Podium</b>				21,074
Podium (GF)	7,098.4	1	1	7,098
Mezzanine (Townhouse)	246.9			
Podium (L2)	7,098.4	1	1	7,098
Podium (L3) (A2 and A3 only)	3,438.8	1	1	3,439
Podium (L4) (A2 and A3 only)	3,438.8	1	1	3,439
<b>Building A1 - Midrise + Bridge</b>				19,897
Mid-Rise (L3)	1,490.7	1	3	1,491
Mid-Rise (L4)	1,490.7	1	4	1,491
Mid-Rise (L5)	1,512.4	1	5	1,512
Mid-Rise (L6)	1,906.5	1	6	1,907
Mid-Rise (L7)	1,850.6	1	7	1,851
Mid-Rise (L8)	1,944.5	1	8	1,945
Mid-Rise (L9)	1,881.0	1	9	1,881
Mid-Rise (L10)	1,881.8	1	10	1,882
Mid-Rise (L11)	1,810.5	1	11	1,811
Mid-Rise (L12)	1,032.1	1	11	1,032
Mid-Rise (L13-L15)	1,032.1	3	15	3,096
<b>Building A2 - Tower</b>				22,433
Mid-Rise (L5)	1,195.6	1	5	1,196
Mid-Rise (L6)	1,195.6	1	6	1,196
Mid-Rise (L7)	1,131.6	1	7	1,132
Mid-Rise (L8)	1,131.6	1	8	1,132
Mid-Rise (L9)	1,072.5	1	9	1,073
Mid-Rise (L10)	1,072.5	1	10	1,073
Mid-Rise (L11)	1,011.5	1	11	1,012
Mid-Rise (L12)	1,011.5	1	12	1,012
Mid-Rise (L13)	944.6	1	13	945
Mid-Rise (L14)	944.6	1	14	945
Mid-Rise (L15)	877.8	1	15	878
Mid-Rise (L16)	877.8	1	16	878
Mid-Rise (L17-L18)	818.5	2	18	1,637
Tower (L19-L29)	757.2	11	29	8,329
<b>Building A3 - Tower</b>				34,530
Mid-Rise (L5-L8)	1,756.0	4	8	7,024
Mid-Rise (L9)	1,321.0	1	9	1,321
Mid-Rise (L10)	1,321.0	1	10	1,321
Mid-Rise (L11)	1,088.7	1	11	1,089
Mid-Rise (L12)	1,088.7	1	12	1,089
Mid-Rise (L13)	1,030.2	1	13	1,030
Mid-Rise (L14)	1,030.2	1	14	1,030
Mid-Rise (L15)	987.4	1	15	987
Mid-Rise (L16)	987.4	1	16	987
Mid-Rise (L17)	928.6	1	17	929
Mid-Rise (L18)	928.6	1	18	929
Mid-Rise (L19)	881.4	1	19	881
Mid-Rise (L20)	881.4	1	20	881
Mid-Rise (L21)	821.1	1	21	821
Mid-Rise (L22)	821.1	1	22	821
Tower (L23-L26)	751.9	4	26	3,008
Tower (L27-L40)	692.1	14	39	9,689
Tower (L41)	692.1	1	41	692
Block B (Park)				
<b>Block C</b>				<b>38,861</b>
<b>Building C1</b>				38,861
Podium (GF)	3,097.2	1	1	3,097
Mezzanine (Townhouse)	261.5			
Podium (L2)	2,639.1	1	2	2,639
Podium (L3)	2,234.6	1	3	2,235
Podium (L4)	2,234.6	1	4	2,235
Mid-rise(L5)	1,754.6	1	5	1,755
Mid-rise(L6)	1,754.6	1	6	1,755
Mid-rise(L7)	1,591.9	1	7	1,592
Mid-rise(L8)	1,528.1	1	8	1,528
Mid-rise(L9)	1,463.9	1	9	1,464
Mid-rise(L10)	1,400.1	1	10	1,400
Mid-rise(L11)	1,336.1	1	11	1,336

Tower (L12)	1,272.3	1	12	1,272	
Tower (L13)	761.4	1	13	761	
Tower (L14-L20)	761.4	7	20	5,330	
Tower (L21-L35)	697.5	15	<b>35</b>	10,463	
Block D+H (D1+D2+H1+H2 Hazard Buffer)					
<b>Block E</b>					<b>51,062</b>
<b>Building E - Podium</b>					8,112
Podium (GF)	8,112	1	1	8,112	
Mezzanine (Townhouse)	1,141				
<b>Building E1 - Mid-Rise + TH</b>					26,187
Mid-Rise (L2)	5,517	1	2	5,517	
Mid-Rise (L3)	4,700	1	2	4,700	
Mid-Rise (L4)	2,054	1	4	2,054	
Mid-Rise (L5)	2,054	1	5	2,054	
Mid-Rise (L6-L7)	2,054	2	7	4,107	
Mid-Rise (L8)	1,934	1	7	1,934	
Mid-Rise (L9)	939	1	8	939	
Mid-Rise (L10-L15)	814	6	<b>15</b>	4,883	
<b>Building E2 - Tower</b>					16,763
Mid-Rise (L2)	0	1	2	0	
Mid-Rise (L3)		1	3	0	
Mid-Rise (L4)	1,634	1	4	1,634	
Mid-Rise (L5-L6)	1,634	2	6	3,269	
Tower (L7)	1,184	1	6	1,184	
Tower (L8-L9)	1,184	2	6	2,367	
Tower (L10)	1,123	1	15	1,123	
Tower (L11-L12)	1,057	2	11	2,114	
Tower (L13-L18)	845	6	<b>18</b>	5,072	
<b>Block F</b>					<b>37,187</b>
<b>Building F - Podium</b>					4,775
Podium (GF)	4,775	1	1	4,775	
Mezzanine (Townhouse)	672				
<b>Building F1 - Mid-Rise + TH</b>					17,547
Mid-Rise (L2)	2,384.6	1	2	2,385	
Mid-Rise (L3)	2,384.6	1	3	2,385	
Mid-Rise (L4)	2,087.9	1	4	2,088	
Mid-Rise (L5-L6)	1,731.7	2	6	3,463	
Mid-Rise (L7)	1,365.1	1	7	1,365	
Mid-Rise (L8-L9)	1,365.1	2	9	2,730	
Mid-Rise (L10-L11)	1,091.8	2	<b>11</b>	2,184	
Mid-Rise (L12)	947.3	1	<b>12</b>	947	
<b>Building F2 - Mid-Rise</b>					9,077
Mid-Rise (L2)	1,212.0	1	2	1,212	
Mid-Rise (L3)	1,212.0	1	3	1,212	
Mid-Rise (L4)	814.9	1	4	815	
Mid-Rise (L5-L6)	814.9	2	6	1,630	
Mid-Rise (L7)	701.4	1	<b>6</b>	701	
Mid-Rise (L8-L12)	701.4	5	<b>12</b>	3,507	
<b>Building F-TH1</b>					2,582
Basement	680	1		680	
GF	680	1	1	680	
L2	680	1	<b>3</b>	680	
Penthouse (L3)	543	1		543	
<b>Building F-TH2</b>					3,206
Basement	844	1		844	
GF	844	1	1	844	
L2	844	1	<b>3</b>	844	
Penthouse (L3)	673	1		673	
<b>Block G</b>					<b>47,909</b>
<b>Building G - Podium</b>					6,072
Podium (GF)	6,072	1	1	6,072	
Mezzanine (Townhouse)					
<b>Building G1 Mid-Rise</b>					15,770
Podium (L2)	2,166	1	2	2,166	
Podium (L3)	2,166	1	1	2,166	
Mid-Rise (L4)	1,841	1	3	1,841	
Mid-Rise (L5-L6)	1,449	2	6	2,898	
Mid-Rise (L7-L9)	1,282	3	7	3,845	
Mid-Rise (L10-L11)	999	2	<b>11</b>	1,998	
Mid-Rise (L12)	857	1	<b>12</b>	857	
<b>Building G2 Mid-Rise</b>					22,861
Podium (L2)	2,302	1	2	2,302	

Podium (L3)	2,302	1	3	2,302	
Mid-Rise (L4-L6)	1,788	3	6	5,365	
Mid-Rise (L7)	1,445	1	3	1,445	
Mid-Rise (L8)	1,445	1	7	1,445	
Mid-Rise (L9)	1,040	1	6	1,040	
Mid-Rise (L10-L12)	1,040	3	11	3,119	
Mid-Rise (L13-L18)	974	6	<b>18</b>	5,844	
<b>Building G-TH1</b>					3,206
Basement	844	1		844	
GF	844	1	1	844	
L2	844	1	<b>3</b>	844	
Penthouse (L3)	673	1		673	
<b>TOTALS</b>			Total GCA		272,953



REVISIONS		
DATE	DETAILS	INIT
JULY 9/84	AS CONSTRUCTED	H.F.



**NOTICE TO CONTRACTOR**  
 48 HOURS PRIOR TO COMMENCING WORK  
 NOTIFY THE FOLLOWING

WORKS DEPT., TWP. OF TORONTO	279-7500	LOC. 226
PUBLIC UTILITIES COMM., TWP. OF TORONTO	279-0391	LOC. 330
HYDRO-ELECTRIC COMM., TWP. OF TORONTO	277-9441	
HYDRO-ELECTRIC POWER COM. OF ONT.	488-8800	
BELL TELEPHONE COMPANY	114	
CONSUMERS GAS COMPANY	277-3601	LOC. 30
COUNTY OF PELL (IF APPLICABLE)	277-9428	LOC. 33
DEPT. OF HIGHWAYS OF ONT. (IF APPLICABLE)	248-3331	

**GENERAL NOTES**

- ALL DRIVEWAYS GRAVEL UNLESS OTHERWISE NOTED.
- ALL SERVICE LOCATIONS ARE APPROXIMATE AND MUST BE LOCATED ACCURATELY IN FIELD.
- DENOTES BUILDING - NOT LOCATED.
- DENOTES BUILDING - LOCATED.
- T.T.M. No. ELEV.
- TEMP. BENCH MARK ELEV.

THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION

DESIGNED BY <i>J. D. McNICHAH</i> CHK	APPROVED BY <i>A. L. THOMAS</i> CHK

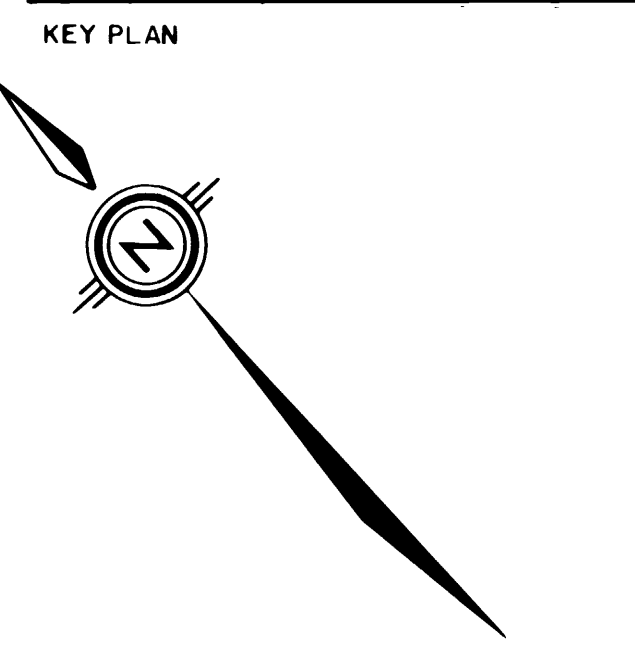
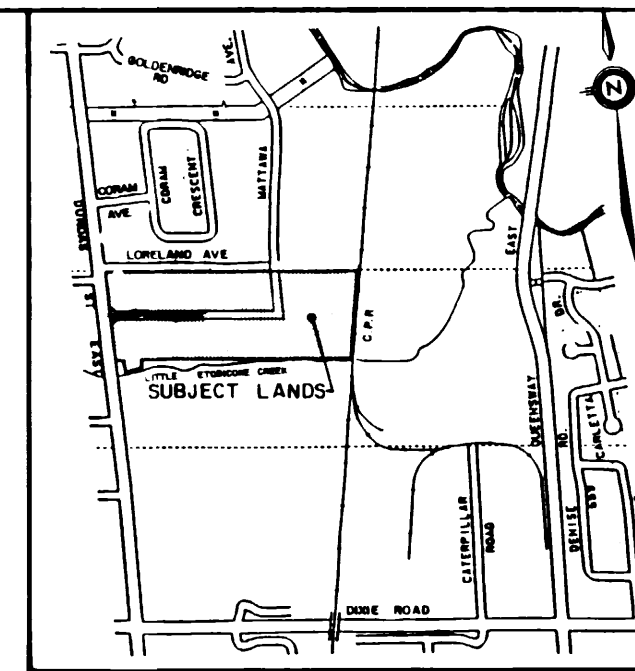
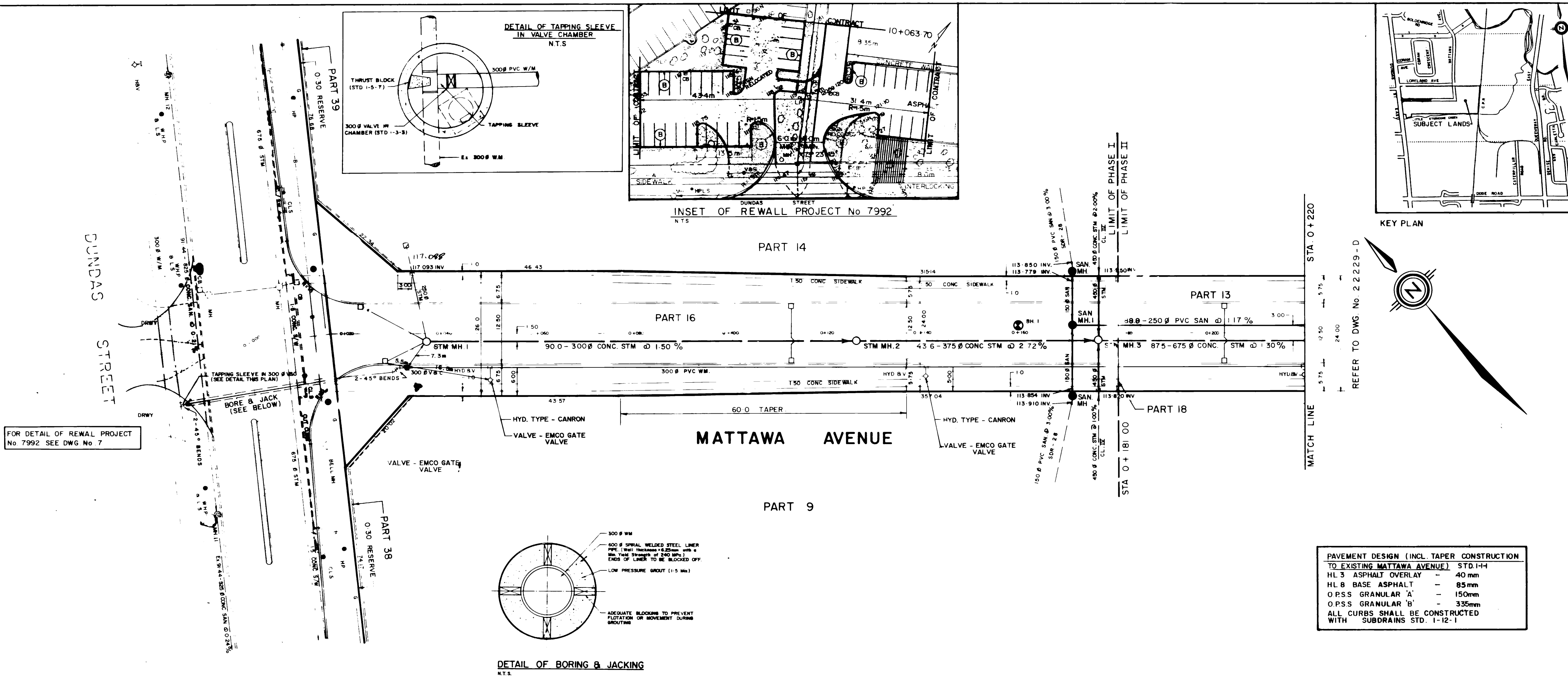
THE PUBLIC UTILITIES COMMISSION  
 OF THE TOWNSHIP OF TORONTO  
**APPROVED**

THE PUBLIC UTILITIES COMMISSION  
 OF THE TOWNSHIP OF TORONTO

**PROPOSED 12" C.I. WATERMAIN T.J.  
 ON CATERPILLAR ROAD AND  
 ON EASEMENT TO MATTAWA AVE.  
 STN. 17+00 TO STN. 23+00**

LOT/S 3, 4	CON / RANGE I S.D.S.	PROJECT NO. <b>W-6346</b>
SCALE HOR. 1" = 40' VERT. 1" = 4'	DRAWN BY R.J.	CHECKED BY <i>H.F.</i>
DATE DEC / 83	SHEET 3 OF 3	PLAN NO. <b>3442-D</b>

3442-D



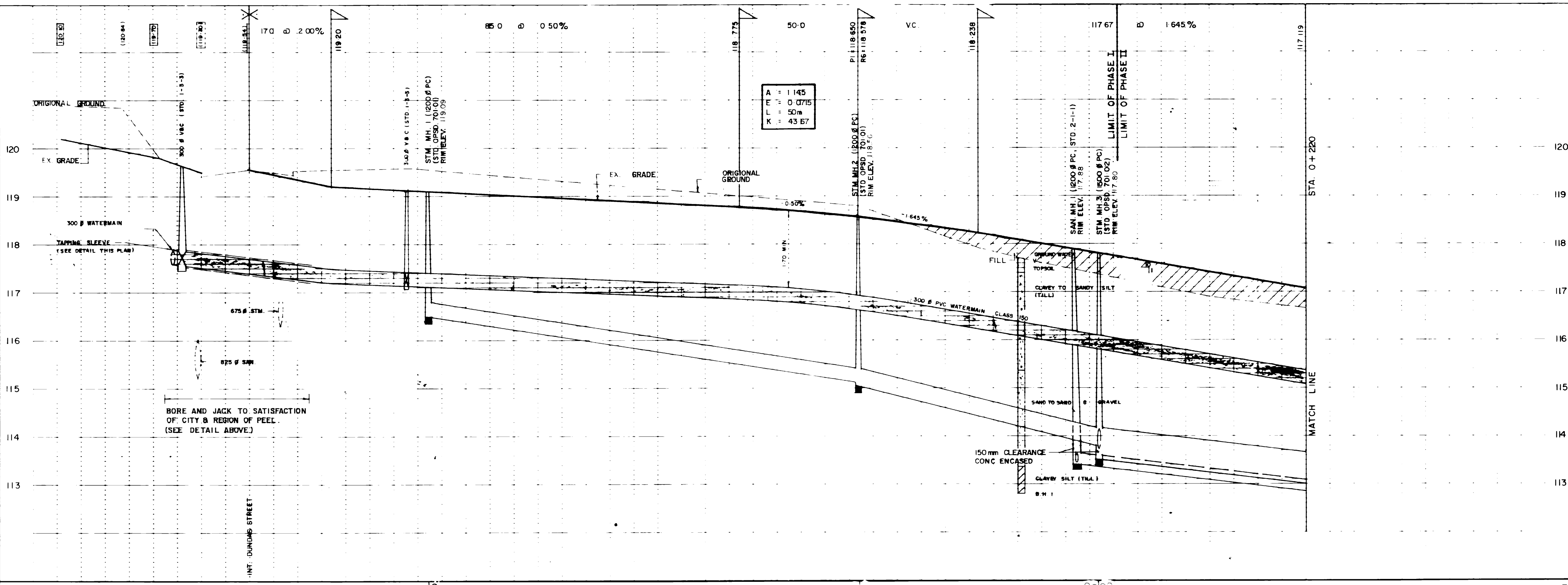
REVISIONS		
DATE	DETAILS	INIT
JAN 29 / 92	RECORD DRAWINGS	LC

- NOTES**
- UNLESS OTHERWISE NOTED ON THE DRAWINGS
- STANDARD CITY OF MISSISSAUGA AND REGION OF PEEL DRAWINGS TO BE CONSTITUTED AS PART OF THIS CONTRACT
  - ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE AND ANY DISCREPANCIES REPORTED TO THE ENGINEER
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD
  - ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LANDS TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER. REPLACEMENT AND REPAIR OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT THE CONTRACTOR'S EXPENSE
  - BLASTING WILL NOT BE ALLOWED UNLESS AUTHORIZED BY THE CITY OF MISSISSAUGA PUBLIC WORKS DEPARTMENT
  - SEWERS**
    - ALL NON-REINFORCED CONCRETE PIPE AND REINFORCED CONCRETE PIPE SHALL CONFORM WITH A.S.T.M. SPECIFICATIONS C-14 AND C-76 RESPECTIVELY AND SHALL BE OF THE STRENGTHS INDICATED
    - P.V.C. SDR 35 PIPES SHALL BE EQUAL TO ASTM SPECS D-3034 OR LATEST AMENDMENT. PIPE DEFLECTION SHALL NOT EXCEED 5%
    - STANDARD RUBBER GASKET JOINTS TO BE USED THROUGHOUT STORM SEWER SYSTEM AND PREMIUM RUBBER GASKETS THROUGHOUT SANITARY SEWER SYSTEM
    - SEPARATE TRENCH SPACING - 3.0m CENTRE TO CENTRE
    - BEDDING TO BE CLASS 'B' AS PER STD. 2-3-1
    - TRENCH WIDTH AT TOP OF PIPE AS PER STD. 2-3-1 (MAX. WIDTH)
    - THE CONTRACTOR TO BE RESPONSIBLE FOR SUPPLYING EXTRA BEDDING AND/OR STRONGER PIPE IF ACTUAL TRENCH WIDTH EXCEEDS THE DESIGN WIDTH
  - CATCHBASINS**
    - SINGLE PRECAST AS PER STD. OPSD. 705 0-2
    - DOUBLE PRECAST AS PER STD. OPSD. 705 0-1
    - INLET CATCHBASIN AS PER STD. OPSD. 705 0-3
    - FRAME AND GRATE AS PER STD. OPSD. 400 0-2
    - INLET CATCHBASIN FRAME AND GRATE AS PER STD. OPSD. 403 0-1
    - CATCHBASIN LEADS**
      - SINGLE - 250mm MIN CONC. E.S.
      - DOUBLE - 300mm MIN CONC. E.S.
      - CONNECTIONS TO MAIN SEWER AS PER STD. 2-9-4
  - WATERMANS**
    - ALL WATERMANS AND APPURTENANCES ARE AS PER REGIONS CURRENT MATERIAL SPECIFICATIONS
    - WATERMANS TO HAVE 25mm MIN. HORIZONTAL CLEARANCE FROM SEWERS. WATER SERVICES TO HAVE 125mm MIN. HORIZONTAL CLEARANCE FROM ALL OTHER UTILITIES
    - WHERE WATERMANS PASS OVER OR UNDER SEWERS A MIN. CLEARANCE OF 0.5m IS REQUIRED
    - WHERE WATERMANS PASS OVER UTILITIES OTHER THAN SEWERS A MIN. CLEARANCE OF 0.15m IS REQUIRED AND WHERE PASSING UNDER THE MIN. CLEARANCE TO BE 0.30m
    - NO WATERMAIN TO BE LAID ON FILL UNTIL THE FILL DENSITY TEST REPORTS HAVE BEEN SUBMITTED TO, AND APPROVED BY THE REGION
  - BLDG. CONNECTIONS**
    - STORM AND SANITARY SEWER CONNECTIONS SINGLE STD. 2-9-1, DOUBLE STD. 2-9-2
    - ALL SERVICES TO BE LOCATED AS PER STD. s 2-8-1, 2-8-2, 2-8-3
  - ROADS**
    - PRIOR TO THE PLACING ANY FILL WITHIN R.O.W. ORGANIC AND TOPSOIL MATERIAL SHALL BE REMOVED
    - ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN. 90% STANDARD PROCTOR DENSITY. THE SUITABILITY AND COMPACTION OF ALL FILL MATERIALS ARE TO BE CONFIRMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIALS

**PAVEMENT DESIGN (INCL. TAPER CONSTRUCTION TO EXISTING MATTAWA AVENUE) STD. I-H**

HL 3 ASPHALT OVERLAY	40 mm
HL B BASE ASPHALT	85 mm
O.P.S.S. GRANULAR 'A'	150 mm
O.P.S.S. GRANULAR 'B'	335 mm

ALL CURBS SHALL BE CONSTRUCTED WITH SUBDRAINS STD. 1-12-1



CHANGE SANITARY SEWER	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	CHANGE SANITARY SEWER
	90.0 - 300 Ø CONC. STM @ 1.50% 100 D												
	43.60 - 375 Ø CONC. STM @ 2.72% 100 D												
	87.5 - 675 Ø CONC. STM @ 1.17% 100 D												
	88.5 - 250 Ø PVC SAN @ 1.30% SDR 35												

**BENCH MARK No. 354**  
SOUTH FACE AT EAST CORNER OF SOUTH END OF CONCRETE BOX CULVERT ACROSS DUNDAS STREET, 6.096 m EAST OF DUNDAS ROAD.  
ELEV. 115.809 m

DESIGNED BY: S.J.G. / 1/2/88  
APPROVED BY: CHKD P.C.

**EMC GROUP LIMITED**  
Consulting Engineers and Project Managers CONCORD, ONTARIO

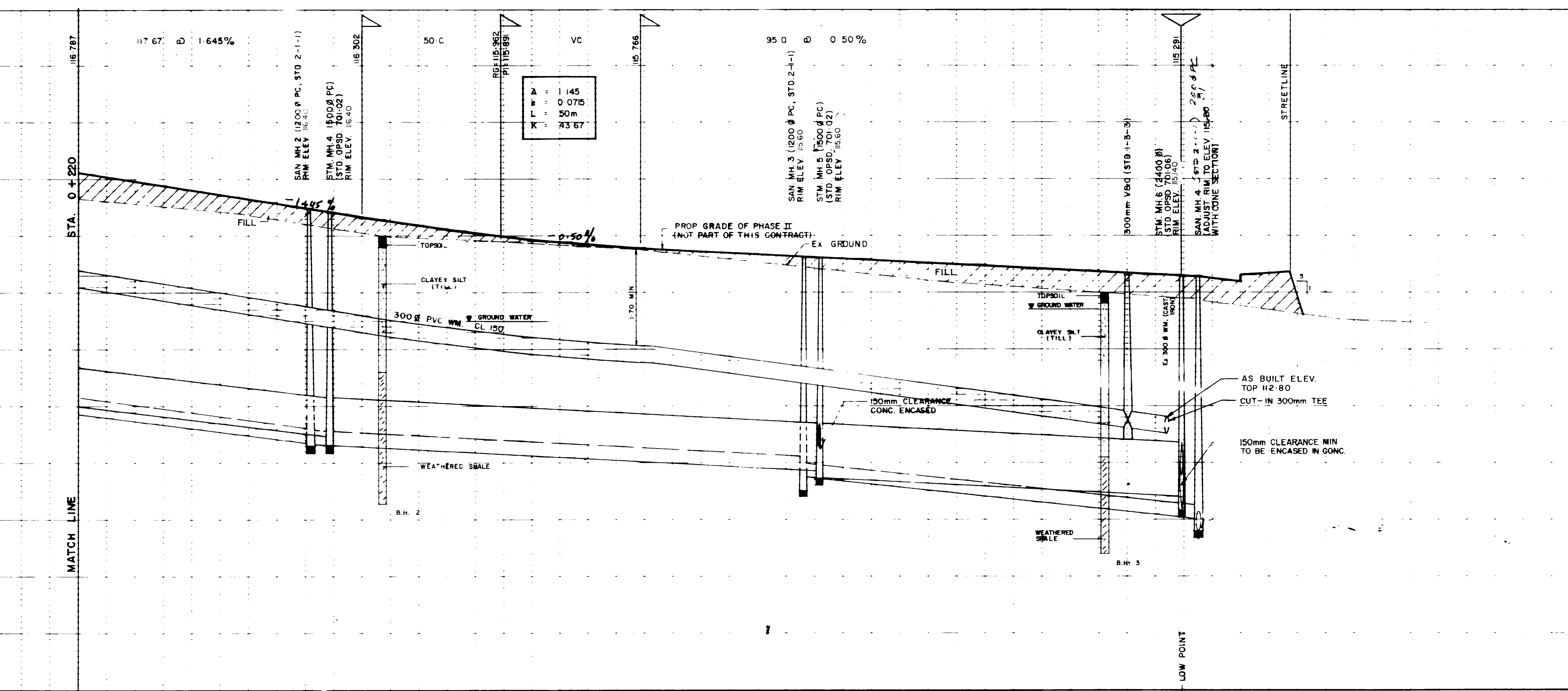
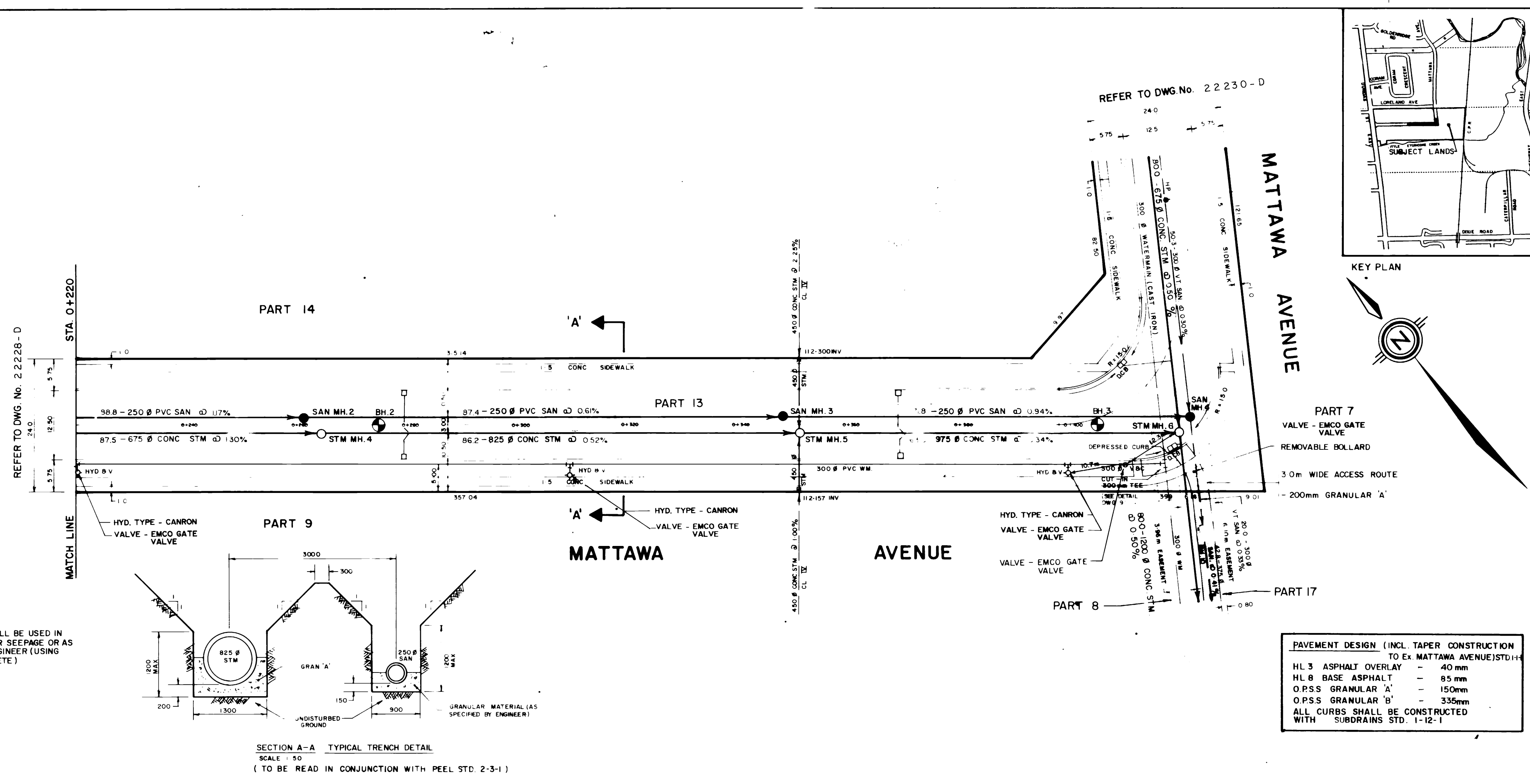
**CEE-PHIL INVESTMENTS LIMITED**

**CITY OF MISSISSAUGA**  
PUBLIC WORKS DEPARTMENT  
REGION FILE: 87-0420

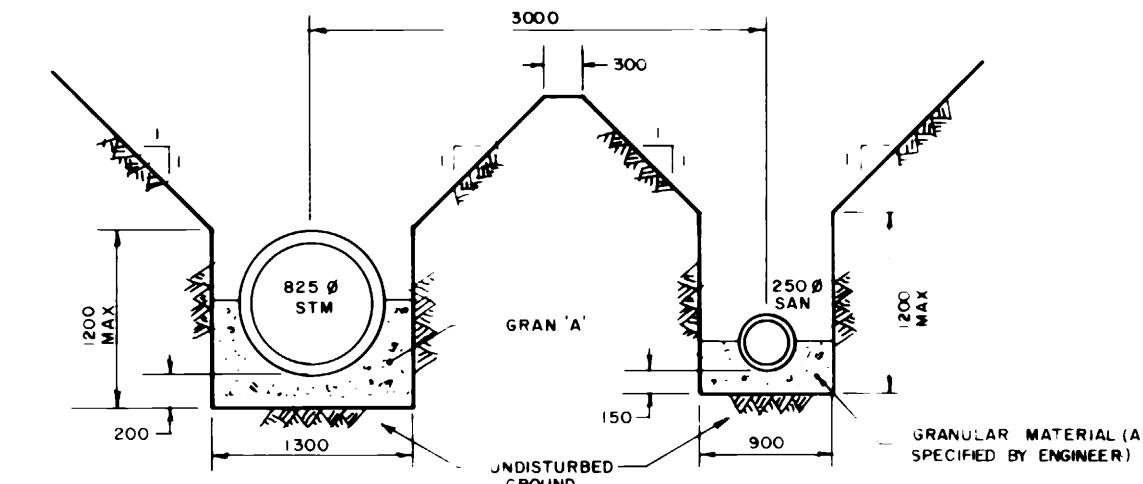
**MATTAWA AVENUE**  
STN. 0+000 TO STN. 0+220

SCALE: HORIZ. 1:500 VERT. 1:50	AREA	PROJECT No
DRAWN BY P.M.	CHECKED BY P.C.	PLAN No
DATE APRIL /1987	SHEET 7 OF 10	22228-D

22228-D



NOTE  
CLASS 'A' BEDDING SHALL BE USED IN AREAS OF HIGH WATER SEEPAGE OR AS DIRECTED BY THE ENGINEER (USING UNREINFORCED CONCRETE)



SECTION A-A TYPICAL TRENCH DETAIL  
SCALE: 1:50  
(TO BE READ IN CONJUNCTION WITH PEEL STD. 2-3-1)

PAVEMENT DESIGN (INCL. TAPER CONSTRUCTION TO EX. MATTAWA AVENUE) STD. 1-1

HL 3 ASPHALT OVERLAY	40 mm
HL 8 BASE ASPHALT	85 mm
O.P.S.S. GRANULAR 'A'	150 mm
O.P.S.S. GRANULAR 'B'	335 mm

ALL CURBS SHALL BE CONSTRUCTED WITH SUBDRAINS STD. 1-12-1

REVISIONS		
DATE	DETAILS	INIT
JAN 29 / 92	RECORD DRAWINGS	LC

- NOTES
- UNLESS OTHERWISE NOTED ON THE DRAWINGS
- STANDARD CITY OF MISSISSAUGA AND REGION OF PEEL DRAWINGS TO BE CONSTITUTED AS PART OF THIS CONTRACT
  - ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE AND ANY DISCREPANCIES REPORTED TO THE ENGINEER
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD
  - ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LANDS, TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER. REPLACEMENT AND REPAIR OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE
  - BLASTING WILL NOT BE ALLOWED UNLESS AUTHORIZED BY THE CITY OF MISSISSAUGA PUBLIC WORKS DEPARTMENT
  - SEWERS
    - ALL NON-REINFORCED CONCRETE PIPE AND REINFORCED CONCRETE PIPE SHALL CONFORM WITH A S T M SPECIFICATIONS C-14 AND C-78 RESPECTIVELY AND SHALL BE OF THE STRENGTHS INDICATED
    - P V C SDR 35 PIPES SHALL BE EQUAL TO ASTM SPECS D-3034 OR LATEST AMENDMENT. PIPE DEFLECTION SHALL NOT EXCEED 5%
    - STANDARD RUBBER GASKET JOINTS TO BE USED THROUGHOUT STORM SEWER SYSTEM AND PREMIUM RUBBER GASKETS THROUGHOUT SANITARY SEWER SYSTEM
    - SEPARATE TRENCH SPACING - 3.0m CENTRE TO CENTRE
    - BEDDING TO BE CLASS 'B' AS PER STD. 2-3-1
    - TRENCH WIDTH AT TOP OF PIPE AS PER STD. 2-3-1 WIDTH
    - THE CONTRACTOR TO BE RESPONSIBLE FOR SUPPLYING EXTRA BEDDING AND/OR STRONGER PIPE IF ACTUAL TRENCH WIDTH EXCEEDS THE DESIGN WIDTH
  - CATCHBASINS
    - SINGLE PRECAST AS PER STD. OPSD 705-02
    - DOUBLE PRECAST AS PER STD. OPSD 705-01
    - INLET CATCHBASIN AS PER STD. OPSD 705-03
    - FRAME AND GRATE AS PER STD. OPSD 400-02
    - GRATE AS PER STD. OPSD 403-01
    - CATCHBASIN LEADS
      - SINGLE - 250 dia MIN CONC. ES
      - DOUBLE - 300 dia MIN CONC. ES
    - CONNECTIONS TO MAIN SEWER AS PER STD 2-9-4
  - WATERMANS
    - ALL WATERMANS AND APPURTENANCES ARE AS PER REGION'S CURRENT MATERIAL SPECIFICATIONS
    - WATERMANS TO HAVE 25mm MIN HORIZONTAL CLEARANCE FROM SEWERS. WATER SERVICES TO HAVE 125mm MIN HORIZONTAL CLEARANCE FROM ALL OTHER UTILITIES
    - WHERE WATERMANS PASS OVER OR UNDER SEWERS A MIN CLEARANCE OF 0.5m IS REQUIRED
    - WHERE WATERMANS PASS OVER UTILITIES OTHER THAN SEWERS A MIN CLEARANCE OF 0.15m IS REQUIRED AND WHERE PASSING UNDER THE MIN CLEARANCE TO BE 0.30m
    - NO WATERMAIN TO BE LAID ON FILL UNTIL THE FILL DENSITY TEST REPORTS HAVE BEEN SUBMITTED TO AND APPROVED BY THE REGION
  - BLDG. CONNECTIONS
    - STORM AND SANITARY SEWER CONNECTIONS SINGLE STD 2-9-1 DOUBLE STD 2-9-2
    - ALL SERVICES TO BE LOCATED AS PER STD'S 2-8-1, 2-8-2, 2-8-3
  - ROADS
    - PRIOR TO THE PLACING ANY FILL WITHIN R.O.W. ORGANIC AND TOPSOIL MATERIAL SHALL BE REMOVED
    - ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN 95% STANDARD PROCTOR DENSITY. THE SUITABILITY AND COMPACTION OF ALL FILL MATERIALS ARE TO BE CONFIRMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIALS

BENCH MARK No. 354  
SOUTH FACE AT EAST CORNER OF SOUTH END OF CONCRETE BOX CULVERT ACROSS DUNDAS STREET, 6.036m EAST OF DIXIE ROAD  
ELEV 115.809m

DESIGNED BY: 1/2/08  
APPROVED BY:   
S.J.G. CHKD. P.C.

EMC DWG. NO. 86129-8



CEE-PHIL INVESTMENTS LIMITED

CITY OF MISSISSAUGA  
PUBLIC WORKS DEPARTMENT

REGION FILE: 87-0420  
MATTAWA AVENUE  
STN. 0+220 TO STN. 0+414.67

SCALE: HOR 1:300 VERT 1:30	AREA	PROJECT No
DRAWN BY: P.M.	CHECKED BY: P.C.	PLAN No
DATE: APRIL / 1987	SHEET 8 OF 10	22229-D

22229-D

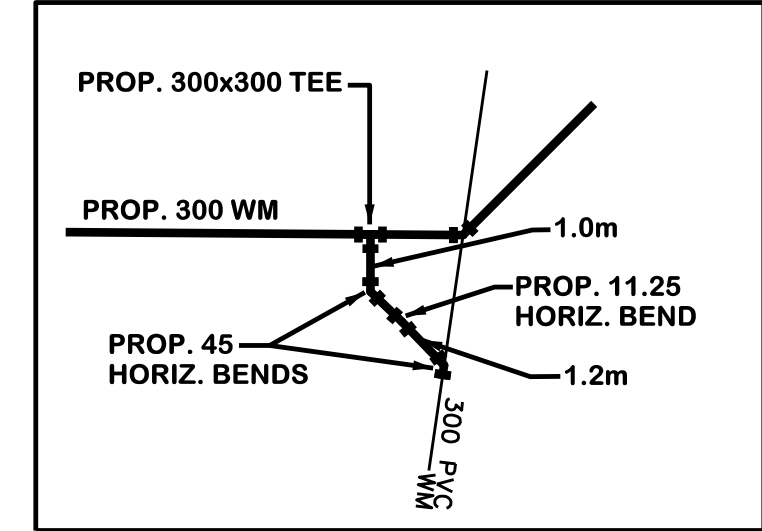
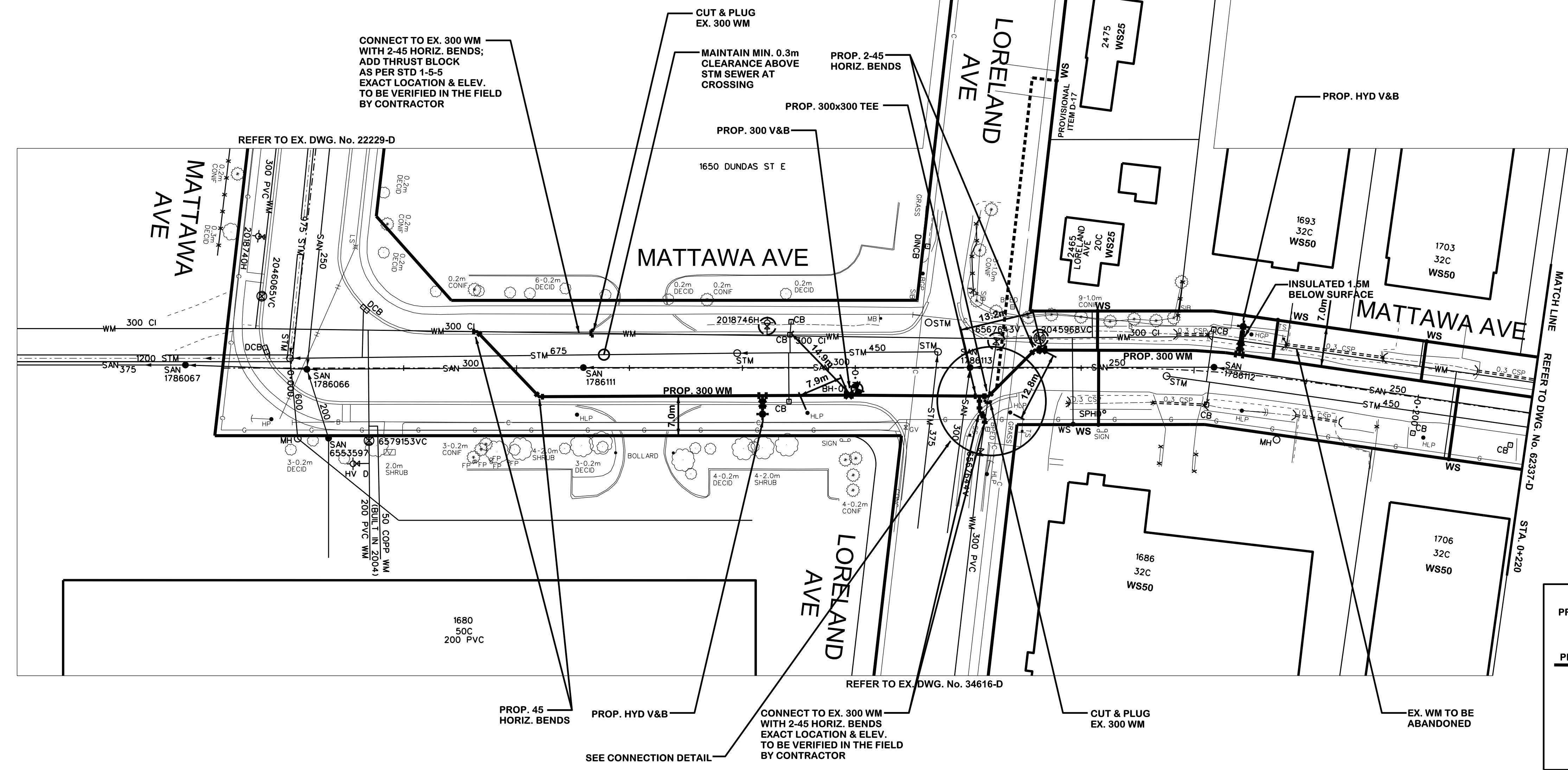
SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS	AUG. 10, 2016	M.T.	GAS MAINS	JUNE 30, 2016	M.T.
STORM SEWERS	AUG. 10, 2016	M.T.	BELL UIG CABLE	JULY 18, 2016	M.T.
WATERMANS	AUG. 10, 2016	M.T.	HYDRO UIG CABLE	JULY 04, 2016	M.T.
TRANSIT			HYDRO ONE	JUNE 07, 2016	M.T.
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES	JUNE 27, 2016	M.T.

REVISIONS		
DATE	DETAILS	INIT.
NOV. 02, 2016	ISSUED FOR PUCC	M.T.
SEPT. 06, 2017	ISSUED FOR TENDER	M.T.
OCT. 11, 2017	ISSUED FOR CONSTRUCTION	M.T.
OCT. 01, 2018	AS RECORDED	RDP

- NOTE:**
- FOR GENERAL NOTES, DETAILS AND LEGEND SEE DWG. 62345-D
  - CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING WATER SERVICES IN THE FIELD
  - WHEN WATER SERVICES CROSS EXISTING STORM AND SANITARY SEWERS, MAINTAIN MIN. 500mm BELOW OR MIN. 300mm ABOVE SEWERS.



**THIS DRAWING TO BE USED FOR WATERMAIN CONSTRUCTION ONLY**

STATION	DESCRIPTION	ELEVATION
0+030.0	45 HORIZ. BEND	114.98
0+036.0	45 HORIZ. BEND	115.21
0+044.0	45 HORIZ. BEND	115.35
0+047.0	300x150 ANCHOR TEE C/W 150 V&B	112.96
0+088.8	300 V&B	113.03
0+122.0	300x300 TEE 45 HORIZ. BEND	113.06
0+131.8	45 HORIZ. BEND	113.20
0+133.1	300 V&B	113.79
0+152.1	300x150 ANCHOR TEE C/W 150 V&B	115.87
0+155.2	300 V&B	115.87
0+167.7	300x150 ANCHOR TEE C/W 150 V&B	113.36
0+180.2	300 V&B	113.41

STATION	DESCRIPTION	ELEVATION
0+000	RESTRAINED JOINTS	114.98
0+020	RESTRAINED JOINTS	115.21
0+040	RESTRAINED JOINTS	115.35
0+060	RESTRAINED JOINTS	112.96
0+080	RESTRAINED JOINTS	113.03
0+100	RESTRAINED JOINTS	113.06
0+120	RESTRAINED JOINTS	113.20
0+140	RESTRAINED JOINTS	113.79
0+160	RESTRAINED JOINTS	115.87
0+180	RESTRAINED JOINTS	115.87
0+200	RESTRAINED JOINTS	113.36
0+220	RESTRAINED JOINTS	113.41

**General Notes**

- All Driveways Are ASPHALT Unless Otherwise Noted
- All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
- All Horizontal And Vertical Bends Are In Degrees
- All Pipes Size In mm
- 20C Existing Water Service, Size In mm
- WS25 Proposed Water Service, Size In mm
- B.M. No. Elev.
- Description Location
- The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only. To Be Verified In Field By Contractor.

Designed by: *[Signature]* Chkd. *[Signature]* Approved by: *[Signature]*

**NOTICE TO CONTRACTOR**

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
HYDRO ONE NETWORKS	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	

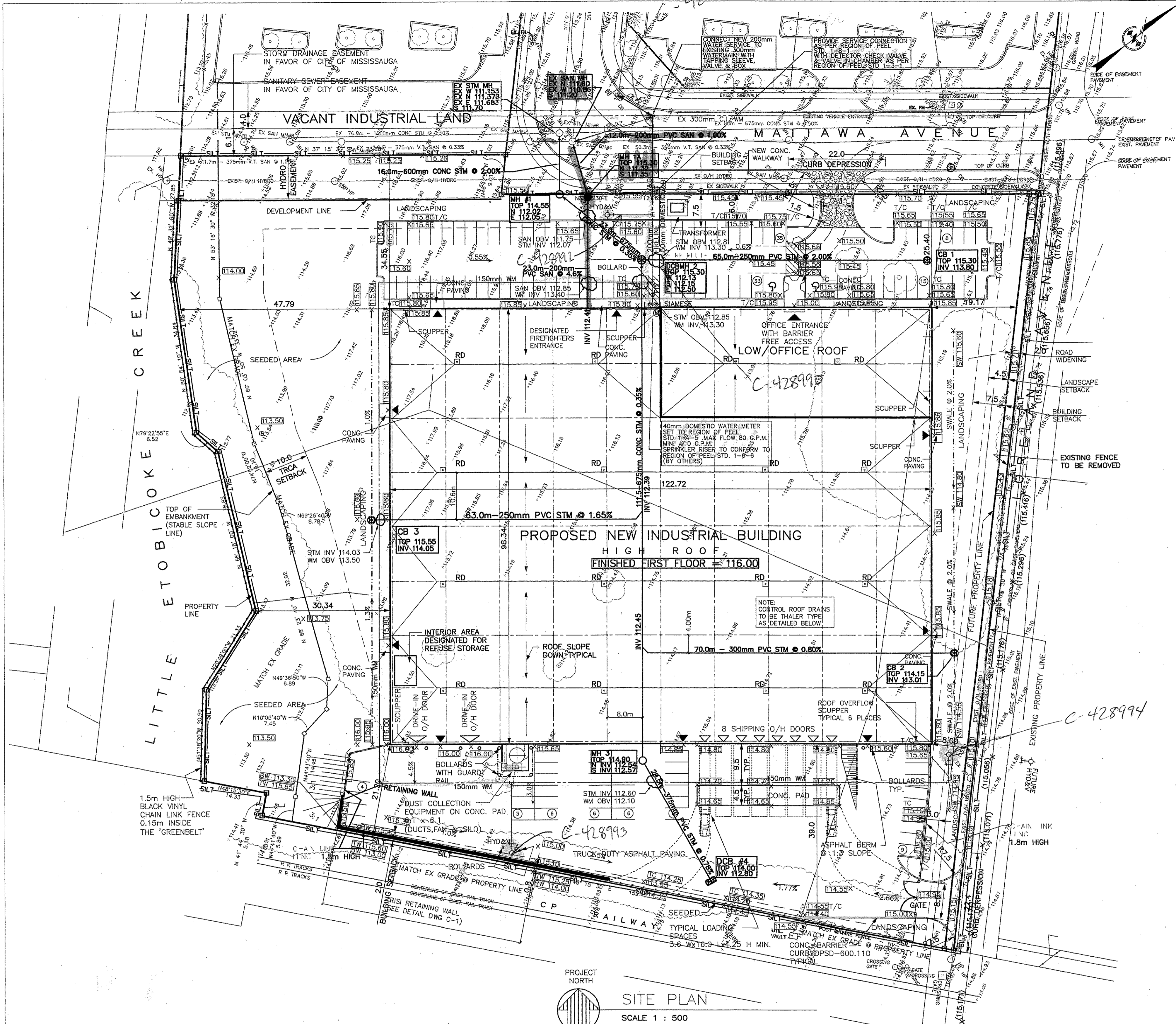
10m 0 10 20 30m HORIZONTAL SCALE  
1m 0 1 2 3m VERTICAL SCALE

**Region of Peel**  
Working for you

**MATTAWA AVE**  
(FROM LORELAND AVE TO END)  
**PROP. 300mm WATERMAIN**

STA. 0+000 TO STA. 0+220

CAD Area	Area	Z-12	Project No.	16-1310-J3
Checked by	Drawn by	M.T.	Plan No.	62336-D
Date	SEPT. 2016	Sheet	1 of 5	



### SITE STATISTICS

SITE AREA	27,133.3 sm	6.70 acres
BUILDING AREA / COVERAGE	12,085.4 sm	44.5%
PAVED VEHICLE ACCESS AREA	6,222.2 sm	22.9%
LANDSCAPED AREA	8,825.7 sm	32.6%

FLOOR AREAS :		
OFFICE	1,501.4 sm	
MANUFACTURING & WAREHOUSE	10,584.0 sm	
GROSS FLOOR AREA (G.F.A.)		
	12,085.4 sm	

PARKING SPACES REQUIRED :		
1.6 spaces /100sm up to 2,325sm GFA	37.2	
1.1 spaces /100sm from 2,325sm to 9,300sm GFA	76.7	
0.6 spaces /100sm over 9,300sm GFA	17.0	
<b>TOTAL</b>	<b>131.0</b>	

PARKING SPACES PROVIDED :		
TYPICAL 2.6m x 5.2m	129	
H/C 4.6m x 5.2m	2	
<b>TOTAL</b>	<b>131</b>	

LOADING SPACES REQUIRED :		
(MIN SIZE 3.5H x 9.0 L x 4.25 H)	3	

LOADING SPACES PROVIDED :		
TYPICAL 3.6 W x 16.0 L	8	

SKETCH SHOWING TOPOGRAPHY FOR SITE DEVELOPMENT PURPOSES OF PART OF LOTS 3 AND 4 CONCESSION 1 SOUTH OF DUNDAS STREET CITY OF MISSISSAUGA REGIONAL MUNICIPALITY OF PEEL

### LEGEND

	CATCHBASIN
	DOUBLE CATCHBASIN
	PROPOSED STORM MANHOLE
	PROPOSED CATCHBASIN MANHOLE
	PROPOSED SANITARY MANHOLE
	PROPOSED ELEVATION
	PROPOSED FUTURE ELEVATIONS ON LORELAND AVE. AS PROVIDED BY CITY OF MISSISSAUGA
	EXISTING ELEVATION
	VALVE AND BOX
	VALVE AND CHAMBER
	HYDRANT AND VALVE
	EXIT / ACCESS DOOR
	O/H DOOR
	H/C PARKING SPACE
	H/C RAMP COMPLETE WITH CURB WITH CURB
	METER ROOM
	STONE MUD MAT (SEE DWG C-1)
	SILT FENCE TO BE CONTAINED WITHIN SITE (SEE DWG C1)
	CB SEDIMENT TRAP 2930.04 (SEE DWG C1)
	CB SEDIMENT TRAP 2930.03 (SEE DWG C1)

I HEREBY CERTIFY THAT THE PROPOSED GRADING, BUILDING TYPE AND APPURTENANT DRAINAGE AND STORM WATER MANAGEMENT WORKS COMPLY WITH SOUND ENGINEERING DESIGN AND THE APPLICABLE LOT GRADING DRAWINGS AND THAT THE PROPOSED GRADING IS IN CONFORMITY WITH THOSE OF THE ADJACENT LANDS FOR DRAINAGE AND RELATIVE ELEVATIONS.

PROJECT NORTH  
**SITE PLAN**  
 SCALE 1 : 500

REFER TO PLAN C-1 FOR DETAILS

### ROOF DRAINAGE CALCULATIONS

ROOF DISCHARGE RATE TO BE CONTROLLED TO 42.0 l/s/ha.  
 ALLOWABLE ROOF DISCHARGE = 1.2085ha x 42 l/s/ha = 50.75 l/s

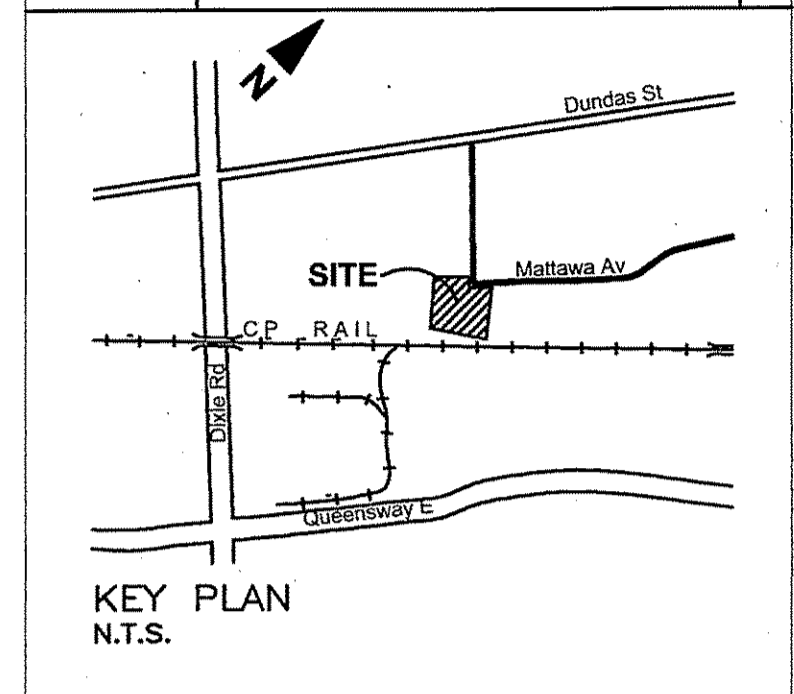
ROOF DRAINS TO BE THALER "CONTROL-FLO"  
 EACH EQUIPPED WITH 2 NOTCH WEIRS AS NOTED RATED AT 23 l/min/INCH HEAD. TOTAL NUMBER OF NOTCHES ARE 32

ROOF AREA = 12085.2m<sup>2</sup>  
 NOTCH AREA RATING = 12085.2m<sup>2</sup> / 377.6 = 31.99 notches

FLOW PER NOTCH = 104.5 l/min (BASED ON MANUFACTURER'S DESIGN TABLES FOR ROOF AREAS HAVING A 102mm RISE)

TOTAL DISCHARGE =  $\frac{93 \times 32}{60} = 49.6 \text{ l/s}$

DATE	ISSUED FOR	REV
FEB 27/04	REVISED SITE PLAN AND REVISED PER REGION COMMENTS	1
APR 6/04	REVISED AS PER CITY COMMENTS	2
APR 27/04	PIV ADDED AS PER REGION COMMENTS	3



GEODETIC: ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM THE CITY OF MISSISSAUGA BENCH MARK NO. 88 ELEVATION = 121.90 METRES

**a.m.candaras associates inc.**  
 consulting engineers  
 8651 Weston rd, suite 203  
 Woodbridge ont. L4L 9R4  
 905-850-8020 Fax 905-850-8099  
 Email: civil@amc.com

## Giffels

30 International Blvd.  
 Toronto (Rexdale), Ontario  
 M9W 5P3

Giffels Design-Build Inc.  
 Tel. # (416) 798-5500  
 Fax. # (416) 798-5531

Giffels Associates Limited  
 Consulting Engineers and Architects  
 Tel. # (416) 675-5950  
 Fax. # (416) 675-4620

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THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE SEAL APPEARING HEREON IS SIGNED AND DATED BY THE ARCHITECT OR ENGINEER.

**RECEIVED**  
 APR 27 2004  
 PUBLIC WORKS  
 REGION OF PEEL

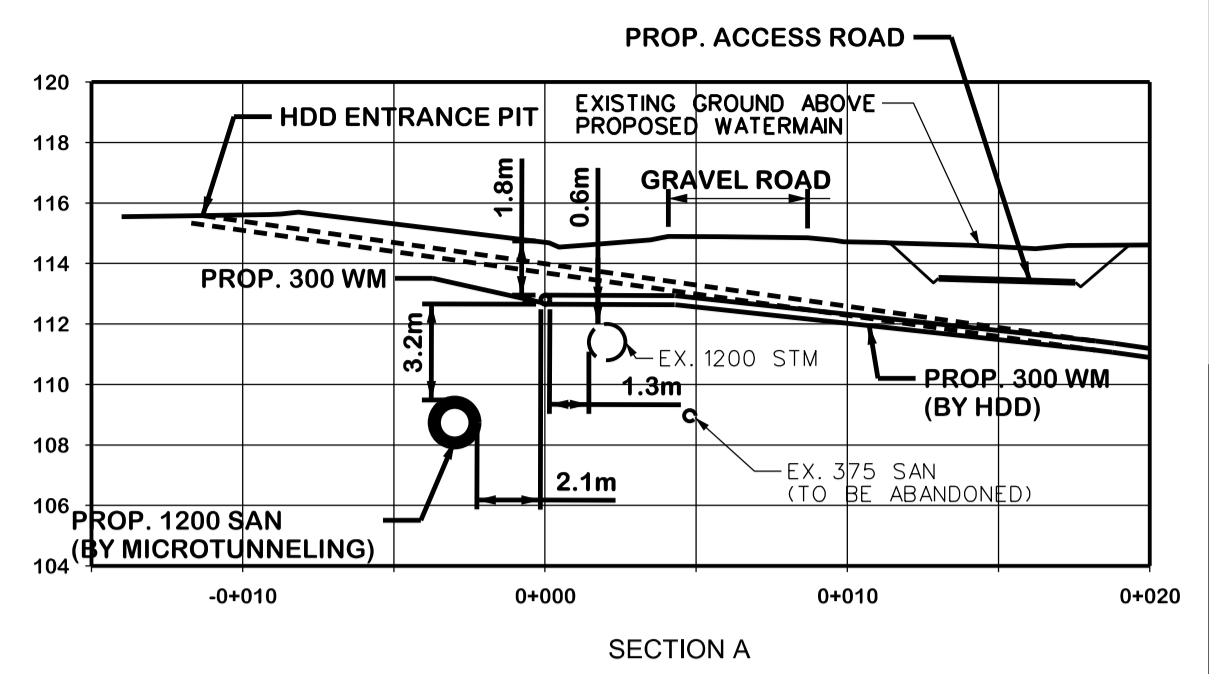
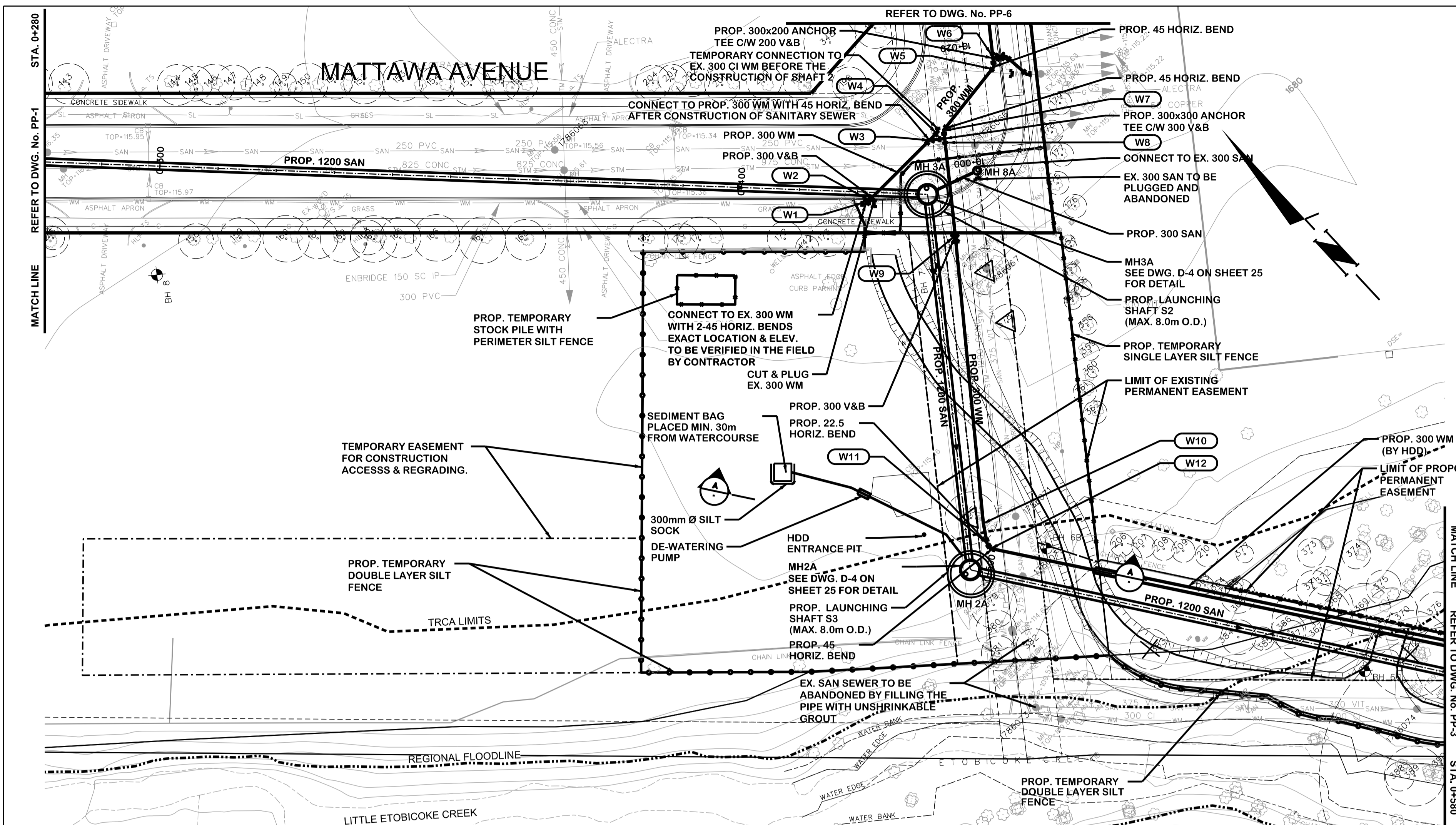
DETAIL SYMBOL

PROJECT MANAGER	L. TEPLITZKY	DRAWN	F.P.
PROJECT LEADER	CHECKED	A.M.C.	
DATE	OCTOBER 2003		

EXHIBITS INTERNATIONAL		<b>INSPECTORS COPY</b>	
PROJECT	INDUSTRIAL BUILDING	c-428990	
1680 MATTAWA AVENUE MISSISSAUGA, ONTARIO		REGION OF PEEL PUBLIC WORKS ENGINEERING & CONSTRUCTION DIVISION WATER & SANITARY SEWER CONNECTIONS	
DRAWING TITLE		APPROVED FOR CONSTRUCTION	
SITE SERVICING, GRADING & STORMWATER MANAGEMENT PLAN		AS SUBMITTED AS MARKED	
SP 03 398 W1		DATE: April 28/04	
CHECK SCALE (print may be photo-reduced)			
0 1 inch 1:500 0 10mm			
AMC PROJECT No.	0307	DRAWING No.	G-1
PROJECT No.	E03261		

Box FA



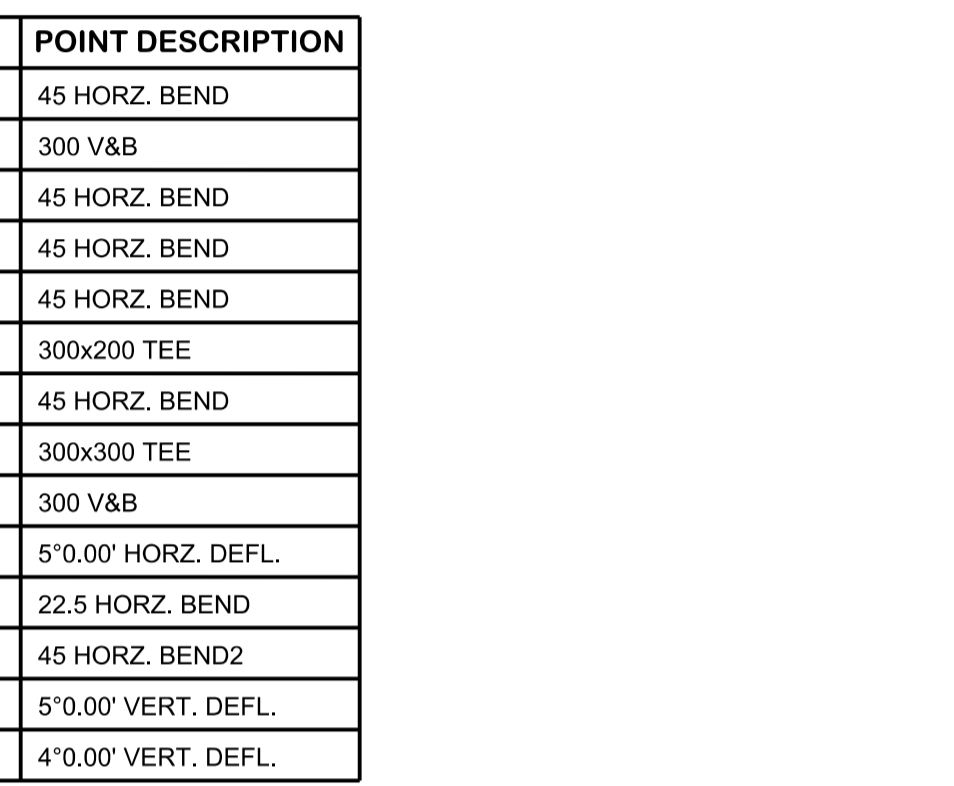
POINT No.	STA.	INV. ELEV.	POINT DESCRIPTION
P.V.I. 1	0+525.24	110.693	BVC
P.V.I. 2	0+526.42	110.563	EVC
P.V.I. 3	0+552.07	106.958	BVC

POINT No.	STA.	NORTHING	EASTING	INV. ELEV.	POINT DESCRIPTION
W1	0+421.5	4829754.9115	615015.7699	113.17	45 HORZ. BEND
W2	0+422.1	4829754.9501	615016.6694	113.17	300 V&B
W3	0+431.9	4829755.5010	615031.2501	113.11	45 HORZ. BEND
W4	0+431.9	4829755.5787	615033.2925	113.10	45 HORZ. BEND
W5	0+432.0	4829757.2431	615047.9820	113.08	45 HORZ. BEND
W6	0+432.0	4829758.4500	615048.8487	113.07	300x200 TEE
W7	0+431.9	4829755.1409	615034.2643	113.09	45 HORZ. BEND
W8	0+431.9	4829753.9339	615033.3737	113.10	300x300 TEE
W9	0+440.1	4829740.0510	615023.0776	113.07	300 V&B
W10	0+489.3	4829700.8588	614993.3458	112.68	5'0.00' HORZ. DEFL.
W11	0+492.8	4829697.8742	614991.4852	112.66	22.5 HORZ. BEND
W12	0+493.7	4829696.8858	614991.3198	112.65	45 HORZ. BEND 2
W13	0+504.1	4829693.0898	614994.0261	112.64	5'0.00' VERT. DEFL.
W14	0+513.1	4829685.8059	614999.2174	111.67	4'0.00' VERT. DEFL.

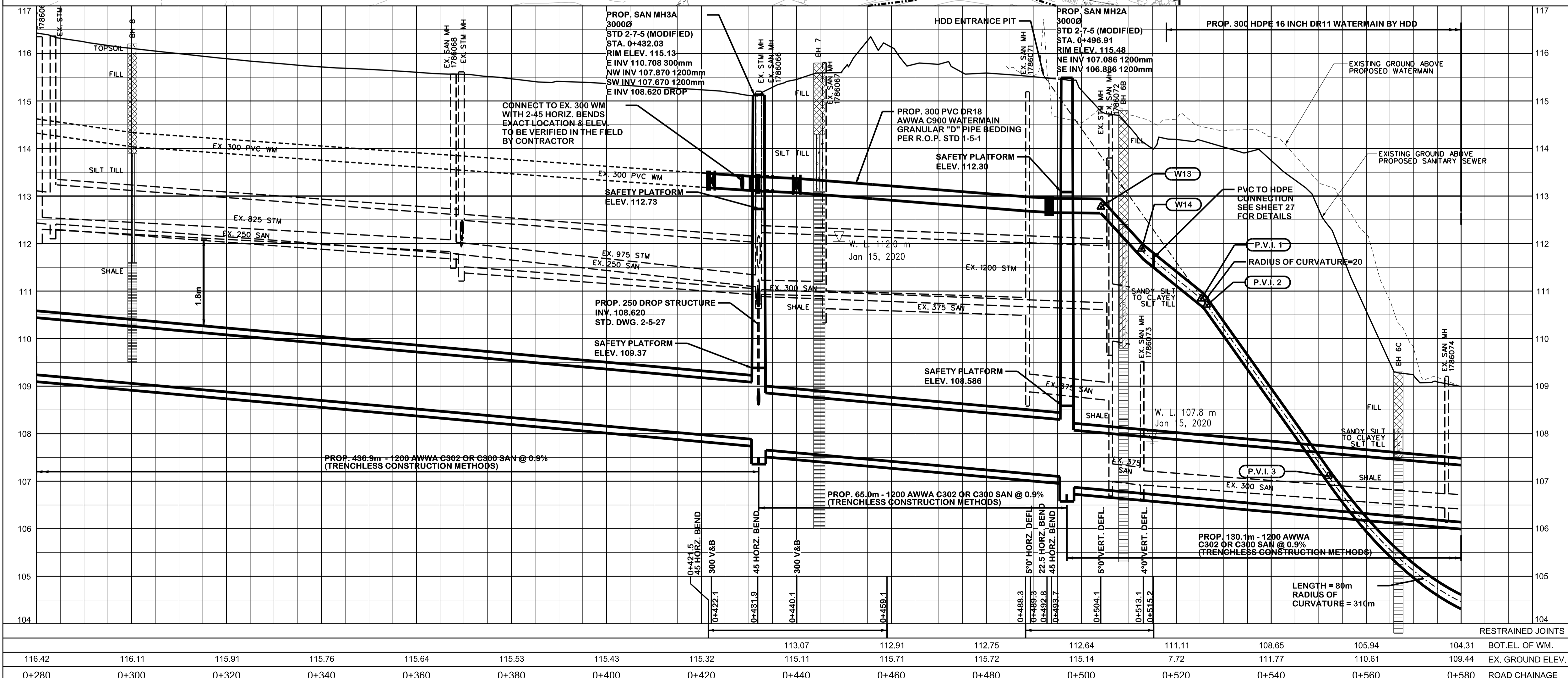
SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
DEC. 18, 2020	ISSUED FOR 100% DESIGN REVIEW	F.Y.
NOV. 06, 2020	ISSUED FOR 90% DESIGN REVIEW	F.Y.
MAY 15, 2020	ISSUED FOR 75% DESIGN REVIEW	F.Y.
DEC. 04, 2019	ISSUED FOR 60% DESIGN REVIEW	F.Y.



**NOTES:**  
 1. FOR GENERAL NOTES SEE DWG. G ON SHT. 2  
 2. FOR LEGENDS SEE DWG. I ON SHT. 1



**General Notes**  
 All Driveways Are ASPHALT Unless Otherwise Noted  
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field  
 All Horizontal And Vertical Bends Are In Degrees  
 All Pipes Size In mm  
 20C Existing Water Service, Size In mm  
 W25S Proposed Water Service, Size In mm  
 B.M. No. 352 Elev. 114.434 Metres  
 Description Location  
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only. To Be Verified In Field By Contractor.

**PARSONS**

Designed by \_\_\_\_\_ Approved by \_\_\_\_\_  
 Chkd. \_\_\_\_\_

**NOTICE TO CONTRACTOR**  
 48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ALECTRA, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	

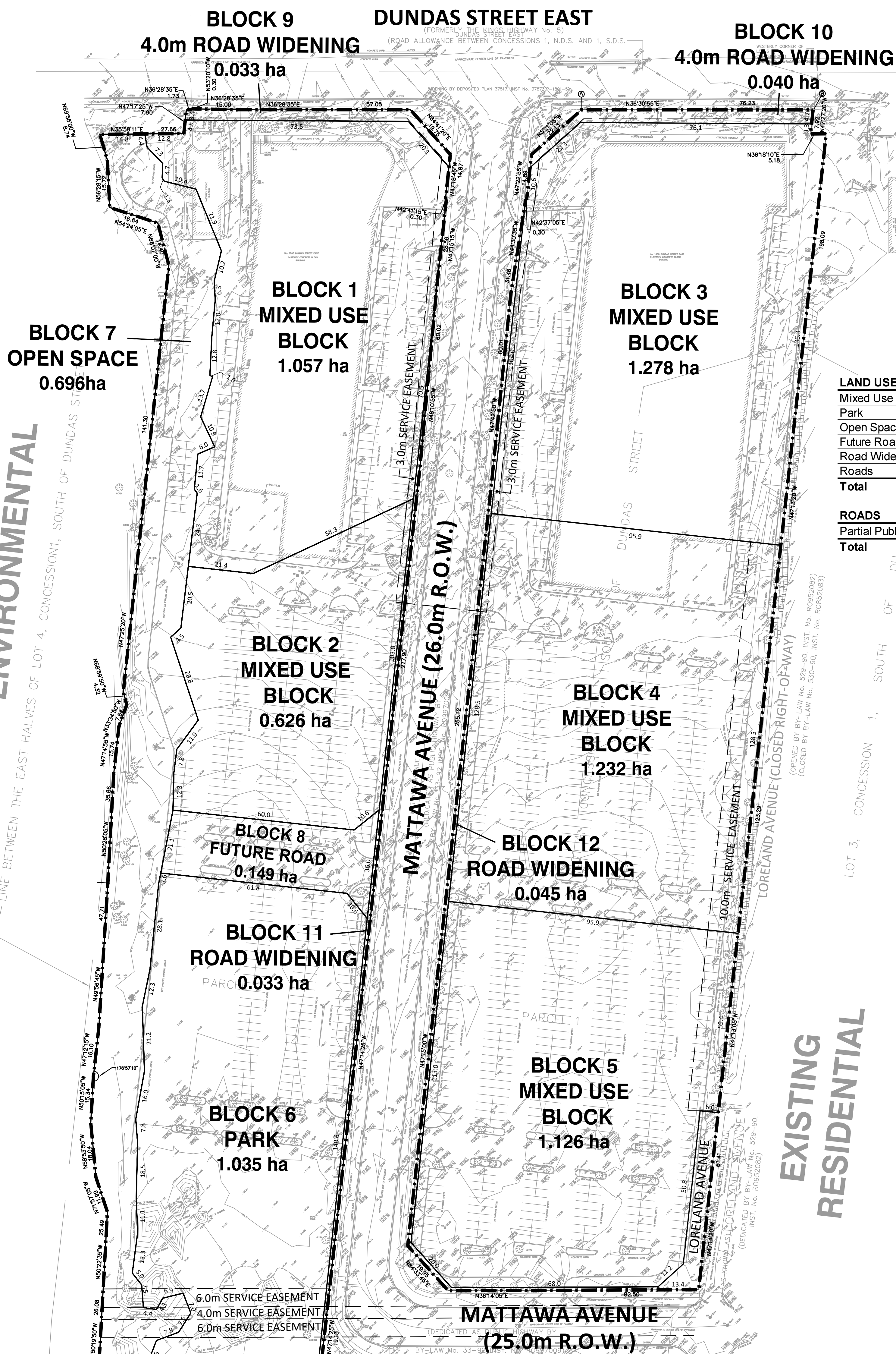
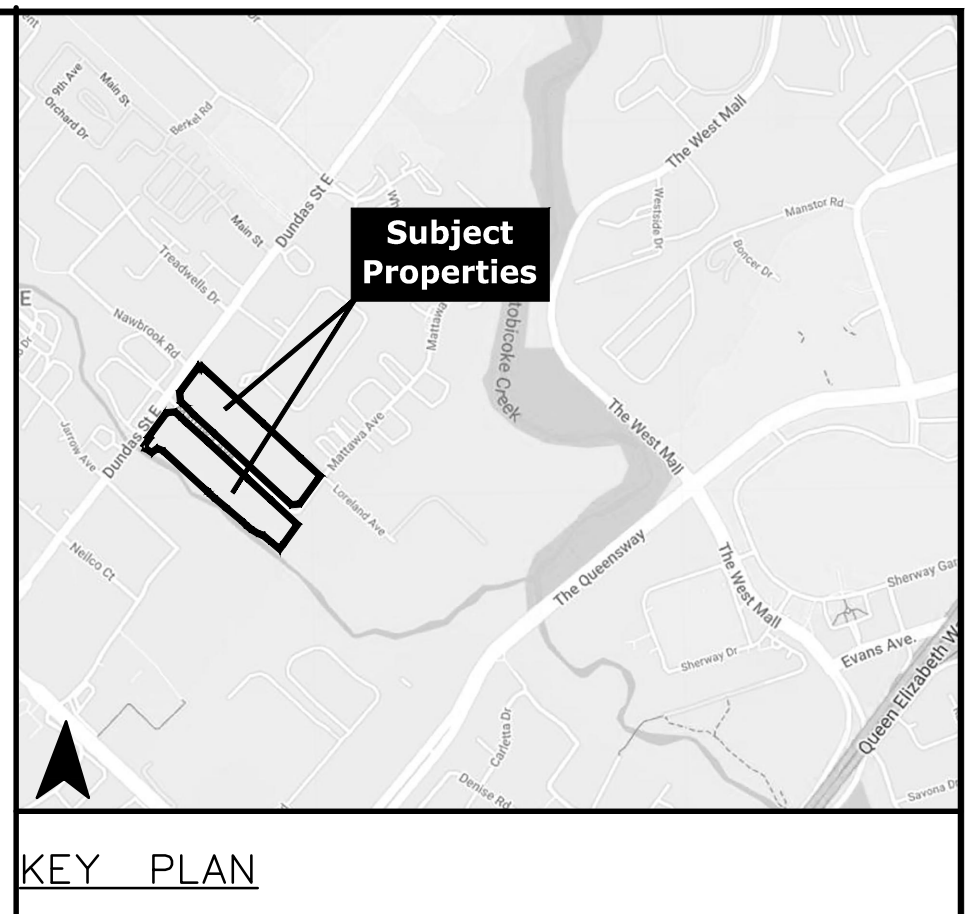
10m 0 10 20 30m HORIZONTAL SCALE  
 1m 0 1 2 3m VERTICAL SCALE

**Region of Peel**  
 working with you

**MATTAWA AVENUE**  
 (FROM DUNDAS STREET TO CATERPILLAR ROAD)  
**PROP. 1200mm Ø SANITARY SEWER AND 300mm Ø WATERMAIN**  
 STA. 0+280 TO STA. 0+580

CAD Area X-XX Area X-XX  
 Checked by M.A.S. Drawn by K.K.N.J.  
 Date DECEMBER 2020 Sheet 4 OF 35

Project No. 16-2300(C), 16-1310(J2)&15-1303  
 Plan No. **PP-2**



EXISTING ENVIRONMENTAL

EXISTING RESIDENTIAL

EXISTING INDUSTRIAL

**LAND USE - AREA TABLE** 18257-1-8dp October 17, 2023

Mixed Use Blocks	Blocks 1-5	5.319 ha±
Park	Block 6	1.035
Open Space	Block 7	0.696
Future Road	Block 8	0.149
Road Widening Blocks	Blocks 9-12	0.151
Roads		0.039
<b>Total</b>		<b>7.389 ha±</b>

**ROADS**

Partial Public R.O.W.	59 m	0.039
<b>Total</b>	<b>59 m</b>	<b>0.039 ha</b>

**6° UTM ZONE 17 COORDINATES**  
NAD83(CSRS-2010) (CENTRAL MERIDIAN 8100° WEST LONGITUDE)

	NORTHING	EASTING
A	4830043.650	614755.010
B	4830105.299	614800.654

(1) THE MTM COORDINATES LISTED ABOVE COMPLY WITH SUBSECTION 14(2) OF ONTARIO REGULATION 216/10 FILED UNDER THE SURVEYORS ACT  
 (2) THE MTM COORDINATES LISTED ABOVE ARE TO BE USED FOR GEOGRAPHIC INFORMATION SYSTEM INTEGRATION ONLY AND CANNOT BE USED TO RE-ESTABLISH THE PROPERTY CORNERS OR BOUNDARIES SHOWN HEREON  
 DISTANCES SHOWN HEREON ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.99974917.

**SURVEYOR'S CERTIFICATE**  
 I certify that: the boundaries of the lands to be subdivided and their relationship to the adjacent lands are correctly shown.

Theepan Ramachandran O.L.S. Signature Day Month Year  
 R. AVS SURVEYING INC.

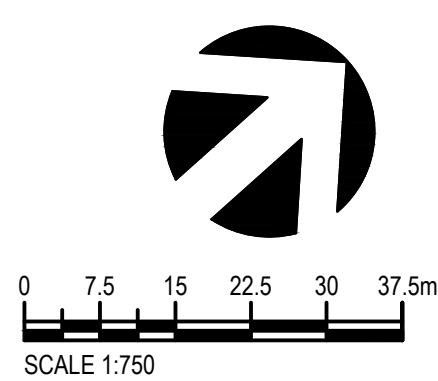
**OWNER'S AUTHORIZATION**  
 I/we, 4Q Commercial WP Inc.  
 being the registered owner(s) of the subject lands hereby authorize **BOUSFIELDS INC.** to prepare and submit a draft plan of subdivision for approval.

Michael Tsourounis Signature Day Month Year

**DRAFT PLAN OF PROPOSED SUBDIVISION**  
 PART OF LOTS 3 AND 4  
 CONCESSION 1  
 SOUTH OF DUNDAS STREET  
 (GEOGRAPHIC TOWNSHIP OF TORONTO, COUNTY OF PEEL)  
 CITY OF MISSISSAUGA  
 REGIONAL MUNICIPALITY OF PEEL

- LEGEND**
- Subject Property
  - - - Existing Easements
- NOTES**
- All dimensions are in metres.
  - All area measurements are computer generated.
  - All elevations refer to Geodetic Datum.

- ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT**
- C. This represents the applicant's entire holding of land.
  - D. Mixed Use Blocks, Park, Open Space, Road Widening Blocks, and Future Road.
  - H. Piped water to be provided.
  - I. Clay loam soil.
  - K. Sanitary & storm sewers to be provided.
  - L. As shown





## **APPENDIX 'B'**

### **Water Calculations**





# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** A

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.
- C = coefficient related to the type of construction.
  - = 1.5 for wood frame construction (structure essentially all combustible).
  - = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).
  - = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).
  - = 0.6 for fire-resistive construction (fully protected frame, floors, roof).
- A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction: 

FC
0.6

  
 C = 

0.6
-----

  
 A = 

9,732.70
----------

 m<sup>2</sup>  
 F = 

13,022
--------

 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor: 

C
0%

  
 Reduction/Surcharge of F = 

13022L/min +
--------------

0
---

 L/min = 

0
---

 L/min = 

13,022
--------

 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler: 

YES	30%
-----	-----

  
 Standard Water Supply: 

YES	10%
-----	-----

  
 Fully Supervised: 

YES	10%
-----	-----

  
**Total**

50%
-----

  
 Reduction of F = 

13022L/min -
--------------

6,511
-------

 L/min = 

6,511
-------

 L/min = 

6,511
-------

 L/min

4) **Separation Charge**  

Building Face	Dist(m)	Charge
North	61	0%
East	36	5%
South	15	15%
West	95	0%
<b>Total</b>		<b>20%</b>

 of 

13022.3871
------------

 L/min = 

2,604
-------

 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 

6511L/min +
-------------

2604L/min
-----------

 = 

9,116
-------

 L/min (2,000L/min < F < 45,000L/min)

<b>F =</b>	<b>9,000</b>	<b>L/min</b>	(round to the nearest 1,000L/min)
<b>F =</b>	<b>150</b>	<b>L/s</b>	
<b>F =</b>	<b>2,378</b>	<b>gpm</b>	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** C

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction: 

FC
0.6

  
 C = 

0.6
-----

  
 A = 

4,315.63
----------

 m<sup>2</sup>  
 F = 

8,672
-------

 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor: 

C
0%

  
 Reduction/Surcharge of 

0%
----

 = 

0
---

 L/min  
 F = 8672L/min + 

0
---

 L/min = 

8,672
-------

 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler: 

YES	30%
-----	-----

  
 Standard Water Supply: 

YES	10%
-----	-----

  
 Fully Supervised: 

YES	10%
-----	-----

  
**Total**

50%
-----

  
 Reduction of 

50%
-----

 L/min = 

4,336
-------

 L/min  
 F = 8672L/min - 

4,336
-------

 L/min = 

4,336
-------

 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge
15	15%
36	5%
100	0%
95	0%
<b>Total</b>	<b>20%</b>

 of 8671.53 L/min = 

1,734
-------

 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 4336L/min + 1734L/min = 

6,070
-------

 L/min (2,000L/min < F < 45,000L/min)

<b>F =</b>	<b>6,000</b>	<b>L/min</b>	(round to the nearest 1,000L/min)
<b>F =</b>	<b>100</b>	<b>L/s</b>	
<b>F =</b>	<b>1,585</b>	<b>gpm</b>	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** E

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction:

FC
0.6
10,666.25 m <sup>2</sup>
13,633 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor:

C
0%

Reduction/Surcharge of F = 13633L/min + 0 L/min = 13,633 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler:  
 Standard Water Supply:  
 Fully Supervised:

YES	30%
YES	10%
YES	10%
Total	50%

Reduction of F = 13633L/min - 6,816 L/min = 6,816 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge	
North	65	0%
East	33	5%
South	24	10%
West	36	5%
Total		20%

of 13632.6 L/min = 2,727 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 6816L/min + 2727L/min = 9,543 L/min (2,000L/min < F < 45,000L/min)

F =	10,000	L/min	(round to the nearest 1,000L/min)
F =	167	L/s	
F =	2,642	gpm	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Building: F

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.
- C = coefficient related to the type of construction.
  - = 1.5 for wood frame construction (structure essentially all combustible).
  - = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).
  - = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).
  - = 0.6 for fire-resistive construction (fully protected frame, floors, roof).
- A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction:

FC
0.6
6,573.30 m <sup>2</sup>
10,702 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor:

LC
-15%

Reduction/Surcharge of

F = 10702L/min + -1605 L/min = -1,605 L/min = 9,097 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler:  
 Standard Water Supply:  
 Fully Supervised:

YES	30%
YES	10%
YES	10%
<b>Total</b>	<b>50%</b>

Reduction of

F = 9097L/min - 4,548 L/min = 4,548 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge
24	10%
21	10%
24	10%
36	5%
<b>Total</b>	<b>35%</b>

of 9096.71 L/min = 3,184 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 4548L/min + 3184L/min = 7,732 L/min (2,000L/min < F < 45,000L/min)

F =	8,000	L/min	(round to the nearest 1,000L/min)
F =	133	L/s	
F =	2,113	gpm	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** F TH1

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction: 

OC
1

  
 C = 

1
---

  
 A = 

1,903.00
----------

 m<sup>2</sup>  
 F = 

9,597
-------

 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor: 

LC
-15%

  
 Reduction/Surcharge of 

-15%
------

 = 

-1,440
--------

 L/min  
 F = 9597L/min + 

-1440
-------

 L/min = 

8,158
-------

 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler: 

YES	30%
-----	-----

  
 Standard Water Supply: 

YES	10%
-----	-----

  
 Fully Supervised: 

YES	10%
-----	-----

  
**Total**

50%
-----

  
 Reduction of 

50%
-----

 L/min = 

4,079
-------

 L/min  
 F = 8158L/min - 

4,079
-------

 L/min = 

4,079
-------

 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge
23	10%
35	5%
9	20%
20	15%
<b>Total</b>	<b>50%</b>

 of 8157.57 L/min = 

4,079
-------

 L/min  
 (max exposure charge can be 75%)
 

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 4079L/min + 4079L/min = 

8,158
-------

 L/min (2,000L/min < F < 45,000L/min)

<b>F =</b>	<b>8,000</b>	<b>L/min</b>	(round to the nearest 1,000L/min)
<b>F =</b>	<b>133</b>	<b>L/s</b>	
<b>F =</b>	<b>2,113</b>	<b>gpm</b>	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Building: F TH2

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction: 

OC
1

  
 C = 

1
---

  
 A = 

2,361.00
----------

 m<sup>2</sup>  
 F = 

10,690
--------

 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor: 

LC
-15%

  
 Reduction/Surcharge of 

-15%
------

 = 

-1,603
--------

 L/min  
 F = 10690 L/min + 

-1603
-------

 L/min = 

9,086
-------

 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler: 

YES	30%
-----	-----

  
 Standard Water Supply: 

YES	10%
-----	-----

  
 Fully Supervised: 

YES	10%
-----	-----

  
**Total**

50%
-----

  
 Reduction of 

50%
-----

 L/min = 

4,543
-------

 L/min  
 F = 9086 L/min - 

4,543
-------

 L/min = 

4,543
-------

 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge
9	20%
39	5%
24	10%
20	15%
<b>Total</b>	<b>50%</b>

 of 9086.35 L/min = 

4,543
-------

 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 4543 L/min + 4543 L/min = 

9,086
-------

 L/min (2,000 L/min < F < 45,000 L/min)

<b>F =</b>	<b>9,000</b>	<b>L/min</b>	(round to the nearest 1,000 L/min)
<b>F =</b>	<b>150</b>	<b>L/s</b>	
<b>F =</b>	<b>2,378</b>	<b>gpm</b>	

# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** G

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction:

FC
0.6
8,306.00 m <sup>2</sup>
12,030 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor:

LC
-15%

Reduction/Surcharge of

F = 12030L/min + -1805 L/min = 10,226 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler:  
 Standard Water Supply:  
 Fully Supervised:

YES	30%
YES	10%
YES	10%
Total	50%

Reduction of

F = 10226L/min - 5,113 L/min = 5,113 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge	
North	24	10%
East	20	15%
South	57	0%
West	64	0%
Total		25%

of 10225.6 L/min = 2,556 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 5113L/min + 2556L/min = 7,669 L/min (2,000L/min < F < 45,000L/min)

F =	8,000	L/min	(round to the nearest 1,000L/min)
F =	133	L/s	
F =	2,113	gpm	



# Counterpoint Engineering Inc.

## REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Building:** G TH1

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where

- F = the required fire flow in litres per minute.  
 C = coefficient related to the type of construction.  
 = 1.5 for wood frame construction (structure essentially all combustible).  
 = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).  
 = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).  
 = 0.6 for fire-resistive construction (fully protected frame, floors, roof).  
 A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) **Fire Flow**  
 Type of Construction: 

OC
1

  
 C = 

1
---

  
 A = 

2,361.00
----------

 m<sup>2</sup>  
 F = 

10,690
--------

 L/min

2) **Occupancy Reduction/Surcharge**  
 Contents Factor: 

LC
-15%

  
 Reduction/Surcharge of 

-15%
------

 = 

-1,603
--------

 L/min  
 F = 10690L/min + 

-1603
-------

 L/min = 

9,086
-------

 L/min

3) **System Type Reduction**  
 NFPA 13 Sprinkler: 

YES	30%
-----	-----

  
 Standard Water Supply: 

YES	10%
-----	-----

  
 Fully Supervised: 

YES	10%
-----	-----

  
**Total**

50%
-----

  
 Reduction of 

50%
-----

 L/min = 

4,543
-------

 L/min  
 F = 9086L/min - 

4,543
-------

 L/min = 

4,543
-------

 L/min

4) **Separation Charge**  
 Building Face

Dist(m)	Charge
24	10%
36	5%
17	15%
24	10%
<b>Total</b>	<b>40%</b>

 of 9086.35 L/min = 

3,635
-------

 L/min  
 (max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 4543L/min + 3635L/min = 

8,178
-------

 L/min (2,000L/min < F < 45,000L/min)

<b>F =</b>	<b>8,000</b>	<b>L/min</b>	(round to the nearest 1,000L/min)
<b>F =</b>	<b>133</b>	<b>L/s</b>	
<b>F =</b>	<b>2,113</b>	<b>gpm</b>	

# Counterpoint Engineering Inc.

## NFPA Theoretical Flow Calculations

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Hydrant:** Fire hydrants connected into 300mm diameter Mattawa Avenue watermain.

Based on National Fire Protection Association Guidelines, the available flow at the minimum residual pressure of 20psi can be calculated based on the observed flow at the observed pressure readings, as follows:

$$Q_F = 29.83 \times c \times d^2 \times p^{0.5}, \text{ where}$$

$Q_F$  = observed flow (US GPM)  
 $c$  = hydrant nozzle coefficient (0.90 - 0.95)  
 $d$  = nozzle diameter (in)  
 $p$  = observed pitot pressure

$$Q_R = Q_F \times h_F^{0.54} / h_R^{0.54}, \text{ where}$$

$Q_R$  = available flow  
 $Q_F$  = observed flow (US GPM)  
 $h_F$  = drop from measured static to desired baseline pressure  
 $h_R$  = drop from measured static to measured residual pressure

Based on flow test results obtained by *Lozzi Aqua Check, July 23, 2021.*

$c =$  0.9  
 $d =$  2.5 in  
number of ports = 2  
 $p =$  56

$$Q_F = 2511 \text{ US GPM}$$

Measured Static Pressure = 80 psi  
Measured Residual Pressure = 71 psi  
Desired Residual Pressure = 20 psi, minimum.

$$Q_R = \boxed{\begin{array}{l} 6995 \text{ US GPM} \\ 26,480 \text{ L/min} \\ 441.34 \text{ L/s} \end{array}} \text{ per fire connecton}$$

Lozzi Aqua Check

Massimo Lozzi

12307 Woodbine Ave, P.O. Box 519

Cell: 416 990-2131

Gormley, ON L0H 1G0

E-mail: lozziaquacheck@gmail.com

### Hydrant Flow Test Form

Job Location: Mattawa Ave and Dundas St. E, Mississauga

Date: July 23, 2021

Time of Test: 3:00 pm

Location of Flow Hydrant: First hydrant SE of residual hydrant

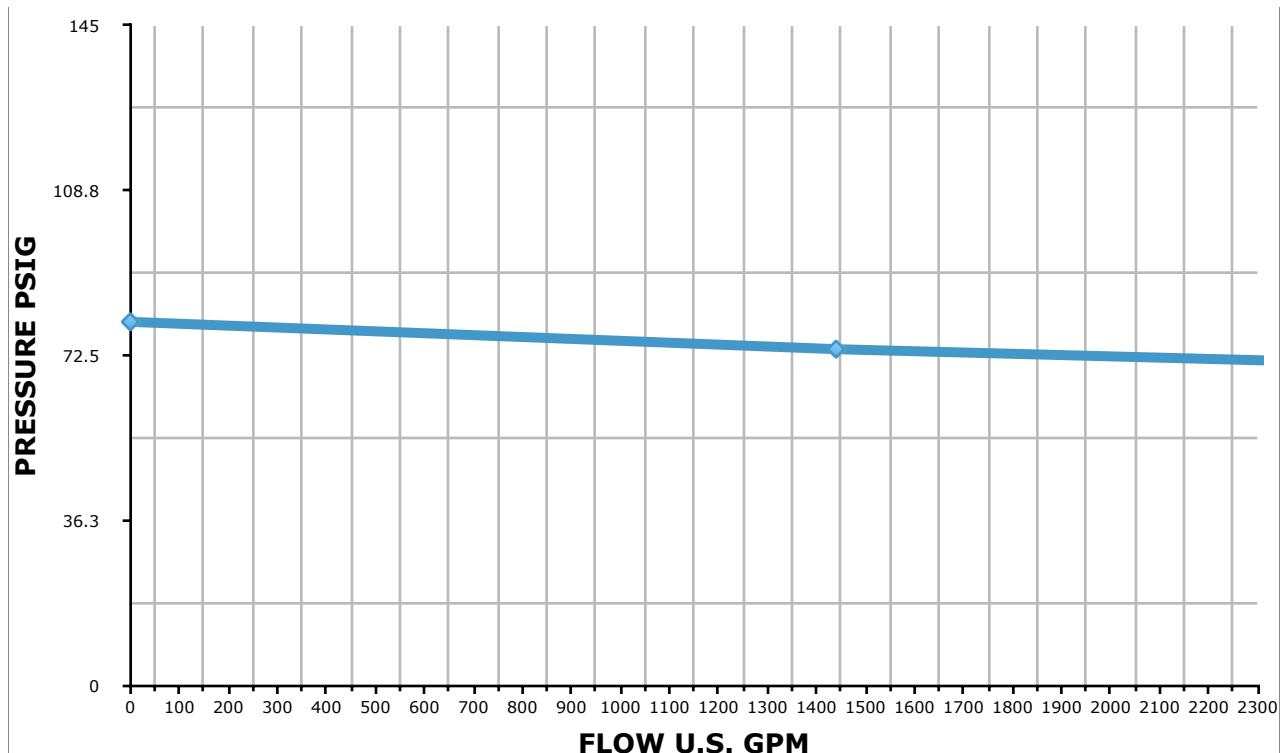
Residual : 1590 Dundas St. E hydrant on Mattawa Ave.

Main Size: 300 mm

Static Pressure: 80 psi

	Number of Outlets & Orifice Size	Pitot Pressure (psi)	Flow (U.S. G.P.M.)	Residual Pressure (psi)
1.	Static	0	0	80
2.	1 x 2 ½	74	1440	74
3.	2 x 2 ½	56	2505	71

Note: Flow test conducted in accordance with NFPA 291



Lozzi Aqua Check

Massimo Lozzi

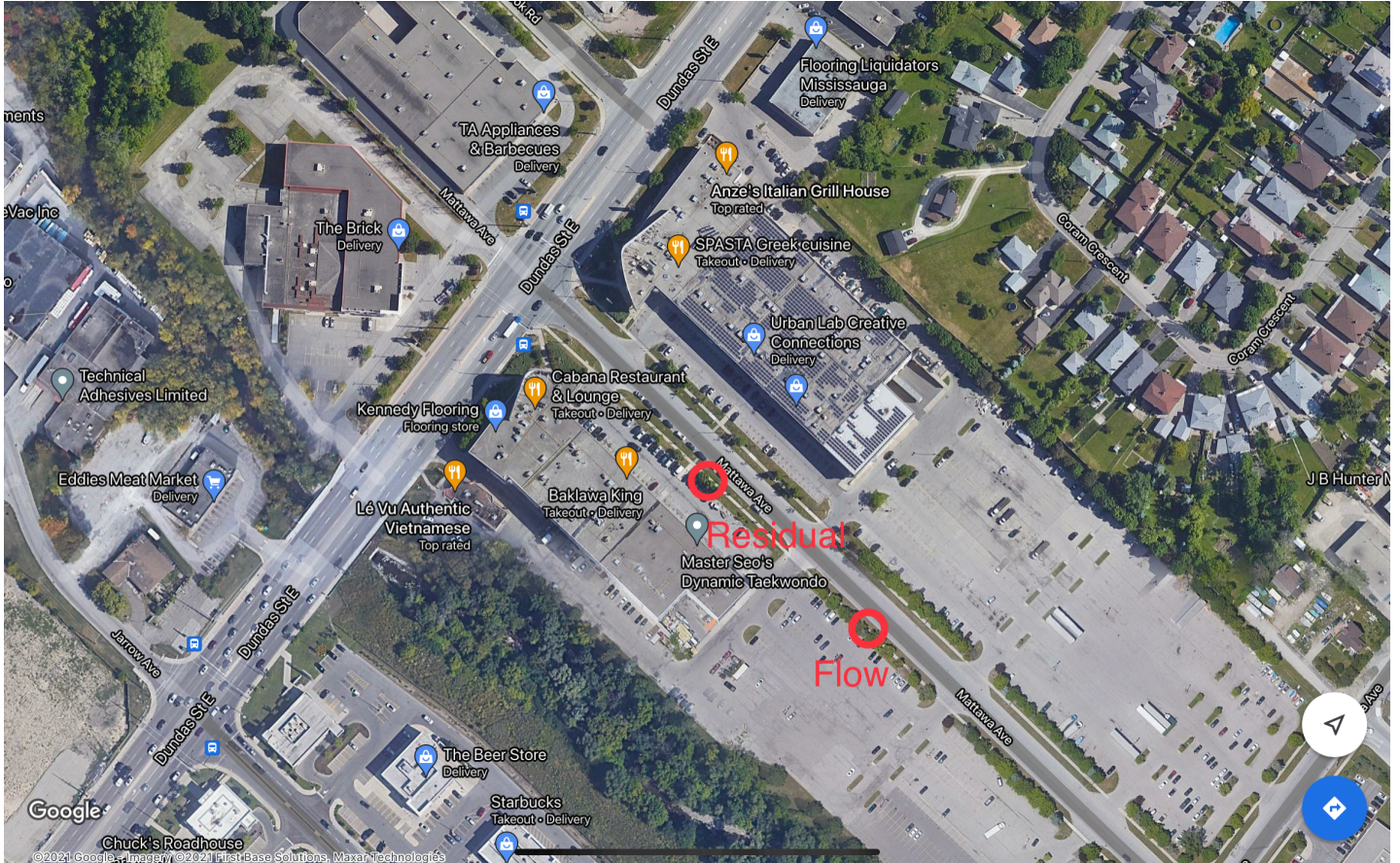
12307 Woodbine Ave, P.O. Box 519

Cell: 416 990-2131

Gormley, ON L0H 1G0

E-mail: lozziaquacheck@gmail.com

Site Map:





## **APPENDIX 'C'**

### **Sanitary Calculations and Multi-Use Demand Sheets**

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

**Project:** 1580-1590 & 1650 Dundas Street East  
**Project No:** 20129  
**Location:** Mississauga  
**Date:** Oct-23

### Site Sanitary Flow Summary

Locations		Domestic Flows			Infiltration Flows		Totals
Area	Ctrl. MH Connections	Total Units	Total Population	Domestic Flows (L/s)	Site Area (ha)	Infiltration Flows (L/s)	Total Flow (L/s)
Block A	1A	1041	2281	<b>27.11</b>	1.06	0.28	<b>27.38</b>
Block C	5A	427	940	<b>12.04</b>	0.63	0.16	<b>12.20</b>
Block E	3A	515	1119	<b>14.15</b>	1.28	0.33	<b>14.48</b>
Block F	4A	379	893	<b>11.48</b>	1.23	0.32	<b>11.80</b>
Block G	6A	515	1182	<b>14.88</b>	1.13	0.00	<b>14.88</b>
<b>TOTALS - Summation by Block:</b>		2877	6415	<b>79.65</b>	5.32	1.09	<b>80.74</b>
<b>TOTALS - Using Overall Populations:</b>		2877	6415	<b>67.66</b>	5.32	1.38	<b>69.04</b>

*Note: per Region of Peel Linear Wastewater Standards, version R 1.0, dated 2023/03/29 - New Linear Wastewater Standard*

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Block A\*  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area\* 1.06 ha  
 Number of Manholes 1 each  
 Number of Townhouses 4  
 Number of Large Units (> 1 Bed) 356 units  
 Number of Small Units (< 1 Bed) 681 units  
 Commercial Area 0.13 ha

### Population Generation

	Total Residential (units)	Total Population (Persons)
Residential	1,041	2275
Commercial	0.13	6
<b>Total Population:</b>		<b>2281</b>

### Flow Generation (Total Block A)

Population (persons)	Domestic Flows		Site Area (ha)	Infiltration Flows		Total Flows
	Peaking Factor	Domestic Flows (L/s)		Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
2281	3.54	27.11	1.060	1	0.28	27.4

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Block C  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area	0.63	ha
Number of Manholes	1	each
Number of Townhouses	2	
Number of Large Units (> 1 Bed)	147	units
Number of Small Units (< 1 Bed)	278	units
Commercial Area	0.10	ha

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	427	935
Commercial	0.10	5
<b>Total Population:</b>		<b>940</b>

0

### Flow Generation (Block C)

Population (persons)	Domestic Flows		Site Area (ha)	Infiltration Flows		Total Flows
	Peaking Factor	Domestic Flows (L/s)		Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
940	3.82	12.04	0.63	1	0.16	12.2



# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: **Block E**  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area **1.28** ha  
 Number of Manholes **1** each  
 Number of Townhouses **17**  
 Number of Large Units (> 1 Bed) **146** units  
 Number of Small Units (< 1 Bed) **352** units  
 Commercial Area **0.21** ha

### Population Generation

	Residential (units)	Commercial (area - ha)	Population (Persons)
Residential	515		1109
Commercial		0.21	10
<b>Total Population:</b>			<b>1119</b>

### Flow Generation (Total)

Population (persons)	Domestic Flows		Infiltration Flows			Total Flows
	Peaking Factor	Domestic Flows (L/s)	Site Area (ha)	Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
1119	3.77	14.15	1.28	1	0.33	14.5

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Block F  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area	1.23	ha
Number of Manholes	1	each
Number of Townhouses	76	
Number of Large Units (> 1 Bed)	83	units
Number of Small Units (< 1 Bed)	220	units
Commercial Area	0.06	ha

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	379	890
Commercial	0.06	3
<b>Total Population:</b>		<b>893</b>

### Flow Generation

Population (persons)	Domestic Flows		Infiltration Flows		Total Flows	
	Peaking Factor	Domestic Flows (L/s)	Site Area (ha)	Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
893	3.83	11.48	1.24	1	0.32	11.8

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Block G  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area	1.13	ha
Number of Manholes	1	each
Number of Townhouses	60	
Number of Large Units (> 1 Bed)	142	units
Number of Small Units (< 1 Bed)	313	units
Commercial Area	0.11	ha

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	515	1176
Commercial	0.11	6
<b>Total Population:</b>		<b>1182</b>

### Flow Generation

Population (persons)	Domestic Flows		Site Area (ha)	Infiltration Flows		Total Flows
	Peaking Factor	Domestic Flows (L/s)		Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
1182	3.75	14.88	0.00	1	0.00	14.9

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: **Overall Site**  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.1	ppu
Small Apartments (<750 sq.ft.)	1.7	ppu
Townhouse	3.4	ppu
Average Flow - Residential	290	L/cap/day
Average Flow - Non-Residential	270	L/cap/day
Infiltration	0.26	L/s/ha
Infiltration (Manholes)	0.00	L/s/mh
Commercial	50	p/ha

Site Area	5.32	ha
Number of Manholes	3	each
Number of Townhouses	159	
Number of Large Units (> 1 Bed)	874	units
Number of Small Units (< 1 Bed)	1,844	units
Commercial Area	0.609400	ha

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	2,877	6385
Commercial	0.61	30
<b>Total Population:</b>		<b>6415</b>

### Flow Generation

	Domestic Flows		Infiltration Flows		Total Flows	
	Peaking Factor	Domestic Flows (L/s)	Site Area (ha)	Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
Population (persons)	3.14	67.66	5.32	5	1.38	69.0

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Existing Site  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.0	ppu
Small Apartments (<750 sq.ft.)	1.6	ppu
Average Flow	302.8	L/cap/day
Infiltration	0.20	L/s/ha
Infiltration (Manholes)	0.28	L/s/mh
Commercial	50	p/ha

Site Area	7.39	ha
Number of Manholes	1	each
Number of Large Units		units
Number of Small Units		units
Commercial Area	1.550000	ha

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	0	0
Commercial	1.55	78
<b>Total Population:</b>		<b>78</b>

### Flow Generation

	Domestic Flows		Site Area (ha)	Infiltration Flows		Total Flows
	Peaking Factor	Domestic Flows (L/s)		Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
Population (persons)						
78	4.27	1.16	7.39	1	1.76	2.92

# Counterpoint Engineering Inc.

## Sanitary Flow Generation

Project: 1580-1590 & 1650 Dundas Street East  
 Project No: 20129  
 Location: Existing Adjacent Property  
 Date: Oct-23

### BUILDING 1

Region of Peel Guidelines		
Large Apartments (+750 sq.ft.)	3.0	ppu
Small Apartments (<750 sq.ft.)	1.6	ppu
Average Flow	302.8	L/cap/day
Infiltration	0.20	L/s/ha
Infiltration (Manholes)	0.28	L/s/mh
Commercial	50	p/ha

Site Area	1.21	ha	
Number of Manholes	1	each	
Number of Large Units		units	
Number of Small Units		units	
Commercial Area	1.206000	ha	*Office Area

### Population Generation

	Residential (units) Commercial (area - ha)	Population (Persons)
Residential	0	0
Commercial	1.21	60
<b>Total Population:</b>		<b>60</b>


### Flow Generation

	Domestic Flows		Site Area (ha)	Infiltration Flows		Total Flows
	Peaking Factor	Domestic Flows (L/s)		Number of Manholes	Infiltration Flows (L/s)	Total Flow (L/s)
Population (persons) 60	4.30	0.91	1.21	1	0.52	1.43

# SANITARY SEWER DESIGN TABLE

PROJECT INFORMATION	
Client	Hazelview
Project No.	20129
Project Name	Dundas & Mattawa
Location	Mississauga, ON
Date	2023-10-25
Designed by	TZ
Checked by	KL
File No.	20129


DESIGN NOTES	
Peaking Factor, $M = 1 + 14/(4+P)^{1/2}$	P = Population (in thousands)
Infiltration :	0.26 L/s/ha of site area 0.28 L/s/MH for low-lying or subject to flooding manholes
Commercial Population Density :	50 p/ha
Residential Flows:	290 L/cap/day
Commercial Flows:	270 L/cap/day

LOCATION	FROM M.H.	TO M.H.	COMMERCIAL AREA (ha)	DENSITY COMMERCIAL (ppha)	CUMMULATIVE COMMERCIAL POPULATION	INCREMENTAL RESIDENTIAL POPULATION	CUMMULATIVE RESIDENTIAL POPULATION	INCREMENTAL AREA (ha)	CUMULATIVE AREA (ha)	CUMULATIVE EQUIVALENT POPULATION	PEAKING FACTOR	SEWAGE FLOW 1 <sup>(1)</sup> (l/sec)	**INFILTRATION FLOW 2 <sup>(2)</sup> (l/sec)	FOUNDATION DRAIN GROUNDWATER FLOW 3 <sup>(3)</sup> (l/sec)	TOTAL FLOW 1+2+3 (L/sec)	LENGTH (m)	PIPE DIAMETER (mm)	GRADIENT (%)	CAPACITY (l/sec)	ACTUAL VELOCITY (m/sec)	FULL PIPE VELOCITY (m/sec)	DROP IN LOWER M.H. (m)	% OF CAPACITY	Notes
<b>Mattawa (W-E)</b>																								
<b>BLOCK A</b>	MH1A	MH2A	0.13	50	6	2,275	2,275	1.060	1.060	2,281	3.54	27.11	0.28	0.00	27.38	15.9	250	2.0	84.1	1.53	1.71	0.09	32.6	
<b>BLOCK E</b>	MH3A	MH2A	0.21	50	10	1,109	1,109	1.278	1.278	1,119	3.77	14.15	0.33	0.00	14.48	12.3	250	2.0	84.1	1.28	1.71	0.03	17.2	
	MH2A	EX.MH1	0.00	51	17	0	3,384	0.419	2.757	3,400	3.40	38.74	0.72	1.00	40.46	53.1	250	2.0	84.1	1.68	1.71	1.03	48.1	
<b>BLOCK F</b>	MH4A	EX.MH1	0.06	50	3	890	890	1.232	1.232	893	3.83	11.48	0.32	0.00	11.80	12.6	250	2.0	84.1	1.20	1.71	0.03	14.0	
<b>BLOCK C</b>	MH5A	EX.MH1	0.10	50	5	935	935	0.626	0.626	940	3.82	12.04	0.16	0.00	12.20	15.3	250	2.0	84.1	1.20	1.71	0.03	14.5	
	EX. MH1	EX.MH2	0.00	50	25	0	5,209	0.231	2.089	5,233	3.23	56.66	0.54	1.00	58.20	88.7	250	1.2	64.3	1.48	1.31	1.03	90.5	
	EX.MH2	EX.MH3	0.00	50	25	0	5,209	0.227	2.316	5,233	3.23	56.66	0.60	2.00	59.26	87.3	250	0.5	42.9	0.87	0.87	2.03	138.2	Needs Upgrade
<b>BLOCK G</b>	MH6A	EX.MH3	0.11	50	6	1,176	1,176	1.126	1.126	1,182	3.75	14.88	0.29	0.00	15.17	11.7	250	2.0	84.1	1.28	1.71	0.03	18.0	
	EX.MH3	EX.MH4	0.00	50	30	0	6,385	0.203	3.645	6,415	3.14	67.66	0.95	0.00	68.60	72.2	250	0.9	57.7	1.17	1.17	0.03	119.0	Needs Upgrade
<b>Mattawa (N-S)</b>																								
	EX.MH8	EX.MH7	0.00	50	0	0	0	0.147	0.147	0	4.00	0.00	0.04	0.00	0.04	68.5	300	0.9	93.8	0.12	1.33	0.03	0.0	
	EX.MH7	EX.MH4	0.00	50	0	0	0	0.125	0.272	0	4.00	0.00	0.07	0.00	0.07	49.1	300	0.5	68.4	0.14	0.97	0.03	0.1	
<b>Adjacent Property</b>	EX.MH9	EX.MH4	1.21	50	60	0	0	2.462	2.462	60	4.00	0.75	0.64	0.00	1.39	12.8	200	0.9	31.6	0.50	1.01	0.05	4.4	
<b>Easement (Downstream)</b>	EX.MH4	EX.MH17	0.00	50	91	0	6,385	0.000	6.379	6,476	3.14	68.16	1.66	0.00	69.82	6.1	300	0.5	68.4	1.10	0.97	1.63	102.1	Needs Upgrade
<b>Connection to Trunk Sewer</b>	EX.MH17	EX.MH16	0.00	50	91	0	6,385	0.000	6.379	6,476	3.14	68.16	1.66	0.00	69.82	9.1	300	1.2	107.2	1.61	1.52	0.03	65.1	Needs Upgrade
																	Date:	Aug. 25/23	Rev.	1				
Drainage Area Plan: SAN1 & SAN2 Consultant: Counterpoint Engineering Sheet: <u>1</u> of <u>2</u> Project No.: 20129																	Date: _____ Approved: _____							
Notes: <sup>(1)</sup> Sewage Flows Per Capita Multiplied by Equivalent Population and by Peaking Factor <sup>(3)</sup> Infiltration flows of 0.26 l/s/ha of site area																								

# SANITARY SEWER DESIGN TABLE

PROJECT INFORMATION	
Client	Hazelview
Project No.	20129
Project Name	Dundas & Mattawa
Location	Mississauga, ON
Date	2023-10-25
Designed by	TZ
Checked by	KL
File No.	20129

DESIGN NOTES	
Peaking Factor, $M = 1 + 14/(4+P)^{1/2}$	P = Population (in thousands)
Infiltration :	0.26 L/s/ha of site area 0.28 L/s/MH for low-lying or subject to flooding manholes
Commercial Population Density :	50 p/ha
Residential Flows:	290 L/cap/day
Commercial Flows:	270 L/cap/day

LOCATION	FROM M.H.	TO M.H.	COMMERCIAL AREA (ha)	DENSITY COMMERCIAL (ppha)	CUMULATIVE COMMERCIAL POPULATION	INCREMENTAL RESIDENTIAL POPULATION	CUMULATIVE RESIDENTIAL POPULATION	INCREMENTAL AREA (ha)	CUMULATIVE AREA (ha)	CUMULATIVE EQUIVALENT POPULATION	PEAKING FACTOR	SEWAGE FLOW 1 <sup>(1)</sup> (l/sec)	**INFILTRATION FLOW 2 <sup>(2)</sup> (l/sec)	FOUNDATION DRAIN GROUNDWATER FLOW 3 <sup>(3)</sup> (l/sec)	TOTAL FLOW 1+2+3 (L/sec)	LENGTH (m)	PIPE DIAMETER (mm)	GRADIENT (%)	CAPACITY (l/sec)	ACTUAL VELOCITY (m/sec)	FULL PIPE VELOCITY (m/sec)	DROP IN LOWER M.H. (m)	% OF CAPACITY	Notes
<b>Mattawa (W-E)</b>																								
<b>BLOCK A</b>	MH1A	MH2A	0.13	50	6	2,275	2,275	1.060	1.060	2,281	3.54	27.11	0.28	0.00	27.38	15.9	250	2.0	84.1	1.53	1.71	0.09	32.6	
<b>BLOCK E</b>	MH3A	MH2A	0.21	50	10	1,109	1,109	1.278	1.278	1,119	3.77	14.15	0.33	0.00	14.48	12.3	250	2.0	84.1	1.28	1.71	0.03	17.2	
	MH2A	EX.MH1	0.00	50	17	0	3,384	0.419	2.757	3,400	3.40	38.74	0.72	0.00	39.46	53.1	250	2.0	84.1	1.68	1.71	1.03	46.9	
<b>BLOCK F</b>	MH4A	EX.MH1	0.06	50	3	890	890	0.271	0.271	893	3.83	11.48	0.07	0.00	11.55	12.6	250	2.0	84.1	1.20	1.71	0.03	13.7	
<b>BLOCK C</b>	MH5A	EX.MH1	0.10	50	5	935	935	0.626	0.626	940	3.82	12.04	0.16	0.00	12.20	15.3	250	2.0	84.1	1.20	1.71	0.03	14.5	
	EX. MH1	EX.MH2	0.00	50	25	0	5,209	0.231	1.128	5,233	3.23	56.66	0.29	0.00	56.95	88.7	250	1.2	64.3	1.48	1.31	1.03	88.5	
	EX.MH2	EX.MH3	0.00	50	25	0	5,209	0.227	1.355	5,233	3.23	56.66	0.35	0.00	57.01	87.3	300	0.5	69.7	1.10	0.99	2.03	81.8	Upsized
<b>BLOCK G</b>	MH6A	EX.MH3	0.11	50	6	1,176	1,176	1.126	1.126	1,182	3.75	14.88	0.29	0.00	15.17	11.7	250	2.0	84.1	1.28	1.71	0.03	18.0	
	EX.MH3	EX.MH4	0.00	50	30	0	6,385	0.203	2.684	6,415	3.14	67.66	0.70	0.00	68.35	72.2	300	0.9	93.8	1.44	1.33	0.03	72.9	Upsized
<b>Mattawa (N-S)</b>																								
	EX.MH8	EX.MH7	0.00	50	0	0	0	0.147	0.147	0	4.00	0.00	0.04	0.00	0.04	68.5	300	0.5	68.4	0.09	0.97	0.03	0.1	
	EX.MH7	EX.MH4	0.00	50	0	0	0	0.125	0.272	0	4.00	0.00	0.07	0.00	0.07	49.1	300	0.5	68.4	0.14	0.97	0.03	0.1	
<b>Adjacent Property</b>	EX.MH9	EX.MH4	1.21	50	60	0	0	1.210	1.210	60	4.00	0.75	0.31	0.00	1.07	12.8	200	0.9	31.6	0.45	1.01	0.05	3.4	
<b>Easement (Downstream)</b>	EX.MH4	EX.MH17	0.00	50	91	0	6,385	0.016	4.182	6,476	3.14	68.16	1.09	0.00	69.25	6.1	375	0.5	124.0	1.15	1.12	1.63	55.9	Upsized
<b>Connection to Trunk Sewer</b>	EX.MH17	EX.MH16	0.00	50	91	0	6,385	0.094	4.276	6,476	3.14	68.16	1.11	0.00	69.28	9.1	375	1.2	194.5	1.61	1.76	0.03	35.6	Upsized
																	Date:	Aug. 25/23		Rev.	1			
Drainage Area Plan: SAN1 & SAN2 Consultant: Counterpoint Engineering																	Date:		Approved:					
Sheet: <u>2</u> of <u>2</u> Project No.: 20129																								
Notes: <sup>(1)</sup> Sewage Flows Per Capita Multiplied by Equivalent Population and by Peaking Factor <sup>(2)</sup> Groundwater flows of 116,000 l/day for Phase 1. <sup>(3)</sup> Infiltration flows of 0.26 l/s/ha of site area																								



## Connection Multi Use Demand Table - Block A

### WATER CONNECTION

<b>Connection point</b> <sup>3)</sup>			
300mm watermain in Mattawa Avenue, south of Dundas Street East.			
<b>Pressure zone of connection point</b>		Unknown	
<b>Total equivalent population to be serviced</b> <sup>1)</sup>		2275 persons.	
<b>Total lands to be serviced</b>		1.06 ha.	
<b>Hydrant flow test</b>		300mm watermain in Mattawa Avenue, south of Dundas Street East.	
Hydrant flow test location			
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	140 kPa	441.34 l/s (flow at 20 psi).	
Maximum water pressure	552 kPa	0 l/s (static pressure).	

No.	Demand type	Water demands		
		Demand (in l/s)		
		Use 1 <sup>5)</sup>	Use 2 <sup>5)</sup>	Total
1	Average day flow	7.41 l/s		7.41 l/s
2	Maximum day flow	14.8 l/s		14.8 l/s
3	Peak hour flow	22.24 l/s		22.24 l/s
4	Fire flow <sup>2)</sup>	150 l/s		150 l/s
<b>Analysis</b>				
5	Maximum day plus fire flow	164.80 l/s		164.80 l/s

Note: very minor retail use included in the residential demands.

### WASTEWATER CONNECTION

250mm diameter sanitary sewer in Mattawa Avenue.

			Total
<b>Connection point</b> <sup>4)</sup>			
<b>Total equivalent population to be serviced</b> <sup>1)</sup>			2269 persons
<b>Total lands to be serviced</b>			1.06 ha.
6	Wastewater sewer effluent (in l/s)	27.4 l/s	27.4 l/s

<sup>1)</sup> The calculations should be based on the development estimated population (employment and/or residential).

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point ID

<sup>4)</sup> Please specify the connection point (wastewater line or manhole ID)  
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

<sup>5)</sup> Please complete as many uses are necessary for the development.  
(Please specify the use)

Please include the graphs associated with the hydrant flow test information table  
Please provide Professional Engineer's signature and stamp on the demand table  
All required calculations must be submitted with the demand table submission.



## Connection Multi Use Demand Table - Block C

### WATER CONNECTION

<b>Connection point</b> <sup>3)</sup>			
300mm watermain in Mattawa Avenue, south of Dundas Street East.			
<b>Pressure zone of connection point</b>		Unknown	
<b>Total equivalent population to be serviced</b> <sup>1)</sup>		935 persons.	
<b>Total lands to be serviced</b>		0.63 ha.	
<b>Hydrant flow test</b>		300mm watermain in Mattawa Avenue, south of Dundas Street East.	
Hydrant flow test location			
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	140 kPa	441.34 l/s (flow at 20 psi).	
Maximum water pressure	552 kPa	0 l/s (static pressure).	

No.	Demand type	Water demands		
		Demand (in l/s)		
		Use 1 <sup>5)</sup>	Use 2 <sup>5)</sup>	Total
1	Average day flow	3.28 l/s		3.28 l/s
2	Maximum day flow	6.54 l/s		6.54 l/s
3	Peak hour flow	9.83 l/s		9.83 l/s
4	Fire flow <sup>2)</sup>	100 l/s		100 l/s
<b>Analysis</b>				
5	Maximum day plus fire flow	106.54 l/s		106.54 l/s

Note: very minor retail use included in the residential demands.

### WASTEWATER CONNECTION

250mm diameter sanitary sewer in Mattawa Avenue.

			Total
<b>Connection point</b> <sup>4)</sup>			
<b>Total equivalent population to be serviced</b> <sup>1)</sup>			935 persons
<b>Total lands to be serviced</b>			0.63 ha
6	Wastewater sewer effluent (in l/s)	12.2 l/s	12.2 l/s

<sup>1)</sup> The calculations should be based on the development estimated population (employment and/or residential).

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point ID

<sup>4)</sup> Please specify the connection point (wastewater line or manhole ID)  
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

<sup>5)</sup> Please complete as many uses are necessary for the development.  
(Please specify the use)

Please include the graphs associated with the hydrant flow test information table  
Please provide Professional Engineer's signature and stamp on the demand table  
All required calculations must be submitted with the demand table submission.



## Connection Multi Use Demand Table - Block E

### WATER CONNECTION

<b>Connection point</b> <sup>3)</sup>			
300mm watermain in Mattawa Avenue, south of Dundas Street East.			
<b>Pressure zone of connection point</b>		Unknown	
<b>Total equivalent population to be serviced</b> <sup>1)</sup>		1109 persons.	
<b>Total lands to be serviced</b>		1.28 ha.	
<b>Hydrant flow test</b>		300mm watermain in Mattawa Avenue, south of Dundas Street East.	
Hydrant flow test location			
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	140 kPa	441.34 l/s (flow at 20 psi).	
Maximum water pressure	552 kPa	0 l/s (static pressure).	

No.	Demand type	Water demands		
		Demand (in l/s)		
		Use 1 <sup>5)</sup>	Use 2 <sup>5)</sup>	Total
1	Average day flow	3.92 l/s		3.92 l/s
2	Maximum day flow	7.79 l/s		7.79 l/s
3	Peak hour flow	11.75 l/s		11.75 l/s
4	Fire flow <sup>2)</sup>	166.67 l/s		166.67 l/s
<b>Analysis</b>				
5	Maximum day plus fire flow	174.46/s		174.46/s

Note: very minor retail use included in the residential demands.

### WASTEWATER CONNECTION

250mm diameter sanitary sewer in Mattawa Avenue.

			Total
<b>Connection point</b> <sup>4)</sup>			
<b>Total equivalent population to be serviced</b> <sup>1)</sup>			1109 persons
<b>Total lands to be serviced</b>			1.28 ha
6	Wastewater sewer effluent (in l/s)	14.5 l/s	14.5 l/s

<sup>1)</sup> The calculations should be based on the development estimated population (employment and/or residential).

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point ID

<sup>4)</sup> Please specify the connection point (wastewater line or manhole ID)  
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

<sup>5)</sup> Please complete as many uses are necessary for the development.  
(Please specify the use)

Please include the graphs associated with the hydrant flow test information table  
Please provide Professional Engineer's signature and stamp on the demand table  
All required calculations must be submitted with the demand table submission.



## Connection Multi Use Demand Table - Block F

### WATER CONNECTION

<b>Connection point</b> <sup>3)</sup>			
300mm watermain in Mattawa Avenue, south of Dundas Street East.			
<b>Pressure zone of connection point</b>		Unknown	
<b>Total equivalent population to be serviced</b> <sup>1)</sup>		890 persons.	
<b>Total lands to be serviced</b>		1.23 ha	
<b>Hydrant flow test</b>		300mm watermain in Mattawa Avenue, south of Dundas Street East.	
Hydrant flow test location			
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	140 kPa	441.34 l/s (flow at 20 psi).	
Maximum water pressure	552 kPa	0 l/s (static pressure).	

No.	Demand type	Water demands		
		Demand (in l/s)		
		Use 1 <sup>5)</sup>	Use 2 <sup>5)</sup>	Total
1	Average day flow	3.11 l/s		3.11 l/s
2	Maximum day flow	6.21 l/s		6.21 l/s
3	Peak hour flow	9.33 l/s		9.33 l/s
4	Fire flow <sup>2)</sup>	150 l/s		150 l/s
<b>Analysis</b>				
5	Maximum day plus fire flow	156.21 l/s		156.21 l/s

Note: very minor retail use included in the residential demands.

### WASTEWATER CONNECTION

250mm diameter sanitary sewer in Mattawa Avenue.

			Total
<b>Connection point</b> <sup>4)</sup>			
<b>Total equivalent population to be serviced</b> <sup>1)</sup>			890 persons
<b>Total lands to be serviced</b>			1.23 ha
6	Wastewater sewer effluent (in l/s)	11.8 l/s	11.8 l/s

<sup>1)</sup> The calculations should be based on the development estimated population (employment and/or residential).

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point ID

<sup>4)</sup> Please specify the connection point (wastewater line or manhole ID)  
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

<sup>5)</sup> Please complete as many uses are necessary for the development.  
(Please specify the use)

Please include the graphs associated with the hydrant flow test information table  
Please provide Professional Engineer's signature and stamp on the demand table  
All required calculations must be submitted with the demand table submission.



## Connection Multi Use Demand Table - Block G

### WATER CONNECTION

<b>Connection point</b> <sup>3)</sup>			
300mm watermain in Mattawa Avenue, south of Dundas Street East.			
<b>Pressure zone of connection point</b>		Unknown	
<b>Total equivalent population to be serviced</b> <sup>1)</sup>		1176 persons.	
<b>Total lands to be serviced</b>		1.13 ha.	
<b>Hydrant flow test</b>		300mm watermain in Mattawa Avenue, south of Dundas Street East.	
Hydrant flow test location			
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	140 kPa	441.34 l/s (flow at 20 psi).	
Maximum water pressure	552 kPa	0 l/s (static pressure).	

No.	Demand type	Water demands		
		Demand (in l/s)		
		Use 1 <sup>5)</sup>	Use 2 <sup>5)</sup>	Total
1	Average day flow	4.12 l/s		4.12 l/s
2	Maximum day flow	8.22 l/s		8.22 l/s
3	Peak hour flow	12.36 l/s		12.36 l/s
4	Fire flow <sup>2)</sup>	133.33 l/s		133.33 l/s
<b>Analysis</b>				
5	Maximum day plus fire flow	141.55 l/s		141.55 l/s

Note: very minor retail use included in the residential demands.

### WASTEWATER CONNECTION

250mm diameter sanitary sewer in Mattawa Avenue.

			Total
<b>Connection point</b> <sup>4)</sup>			
<b>Total equivalent population to be serviced</b> <sup>1)</sup>			1176 persons
<b>Total lands to be serviced</b>			1.13 ha
6	Wastewater sewer effluent (in l/s)	14.9 l/s	14.9 l/s

<sup>1)</sup> The calculations should be based on the development estimated population (employment and/or residential).

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point ID

<sup>4)</sup> Please specify the connection point (wastewater line or manhole ID)  
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

<sup>5)</sup> Please complete as many uses are necessary for the development.  
(Please specify the use)

Please include the graphs associated with the hydrant flow test information table  
Please provide Professional Engineer's signature and stamp on the demand table  
All required calculations must be submitted with the demand table submission.





## **APPENDIX 'D'**

### **Stormwater Management Calculations**

**SWM DESIGN CALCULATIONS**  
**Allowable Unitary Release Rate Calculations - Little Etobicoke Creek**

**Project Name:** 1580-1590 & 1650 Dundas Street East  
**Municipality:** Mississauga, ON  
**Project No.:** 20129  
**Date:** 25-Oct-23

**Prepared by:** P.T  
**Checked by:**  
**Last Revised:** 25-Oct-23

**Total Site Area (ha):** 6.502 ha (limits of post-development drainage areas)

**Etobicoke Creek Quantity Control Unit Release Rates (L/s/ha):**

2-year	5-year	10-year	25-year	50-year	100-year
21.5	33	41	55	62.7	71.8

<b>Block E (201 + 200 + U201A + U201):</b>	1.297	ha	
<b>Block A (202 + 209 + U202 + U202A):</b>	1.045	ha	
<b>Block C (207 + 215+ U207 + U207A):</b>	0.6326	ha	
<b>Block F (203 + 204 + 205 + 206 + U206A + 210):</b>	1.242	ha	
<b>Block G (208 + 211 + 212 + 213 + 213A):</b>	1.097	ha	
<b>Area R201:</b>	0.160	ha	
<b>Park Block (214):</b>	1.029	ha	(Uncontrolled - to be overcontrolled within Blocks A to G)

**Site Area and Block Allowable Release Rates (L/s):**

	2-year	5-year	10-year	25-year	50-year	100-year
<b>Total Site Allowable Release Rates:</b>	<b>139.8</b>	<b>214.6</b>	<b>266.6</b>	<b>357.6</b>	<b>407.7</b>	<b>466.9</b>
<b>Block E:</b>	21.4	32.1	39.7	54.8	61.9	71.0
<b>Block A:</b>	17.3	25.9	32.0	44.2	49.9	57.2
<b>Block C:</b>	10.5	15.7	19.4	26.7	30.2	34.6
<b>Block F:</b>	20.5	30.8	38.0	52.5	59.3	68.0
<b>Block G:</b>	18.1	27.2	33.6	46.4	52.4	60.0
<b>Area R201:</b>	17	23	27	32	35	39
<b>Park Block:</b>	35	60	77	101	119	137

\*Block release rates adjusted to overcontrol for park block and Area R201 flows to ensure entire site achieves total allowable release rate.

## Block A

### U202A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.01	0.25	0.00	
Building/Impervious Area	0.08	0.9	0.07	
	0.09	Total	0.07	TIMP
		Divided by Total Area	0.82	87%

### U202

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.04	0.9	0.04	
	0.04	Total	0.04	TIMP
		Divided by Total Area	0.90	100%

### 209

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.12	0.25	0.03	
Building/Impervious Area	0.08	0.9	0.07	
	0.20	Total	0.10	TIMP
		Divided by Total Area	0.51	40%

### 202

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.71	0.9	0.64	
	0.71	Total	0.64	TIMP
		Divided by Total Area	0.90	100%

<b>Total Landscape Area</b>			0.132	
<b>Total Impervious Area</b>			0.913	
<b>Total Block A Drainage Area</b>			1.045	



## Block C

### U207A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.02	0.25	0.01	
Building/Impervious Area	0.06	0.9	0.06	
	0.09	Total	0.06	TIMP
		Divided by Total Area	0.72	72%

### U207

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.01	0.25	0.00	
Building/Impervious Area	0.03	0.9	0.02	
	0.04	Total	0.03	TIMP
		Divided by Total Area	0.70	69%

### 215

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.08	0.25	0.02	
Building/Impervious Area	0.12	0.9	0.10	
	0.20	Total	0.13	TIMP
		Divided by Total Area	0.63	58%

### 207

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.31	0.9	0.28	
	0.31	Total	0.28	TIMP
		Divided by Total Area	0.90	100%

<b>Total Landscape Area</b>	0.120
<b>Total Impervious Area</b>	0.513
<b>Total Block C Drainage Area</b>	0.633

## Block E

### EXT1

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.03	0.25	0.01	
Building/Impervious Area	0.05	0.9	0.05	
	0.09	Total	0.06	TIMP
		Divided by Total Area	0.65	62%

### 200

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.14	0.25	0.04	
Building/Impervious Area	0.30	0.9	0.27	
	0.44	Total	0.30	TIMP
		Divided by Total Area	0.69	67%

### 201

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.73	0.9	0.66	
	0.73	Total	0.66	TIMP
		Divided by Total Area	0.90	100%

### U201

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.04	0.9	0.03	
	0.04	Total	0.03	TIMP
		Divided by Total Area	0.90	100%

### U201A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.03	0.25	0.01	
Building/Impervious Area	0.06	0.9	0.06	
	0.09	Total	0.06	TIMP
		Divided by Total Area	0.70	69%

**Total Landscape Area** 0.205

**Total Impervious Area** 1.180

**Total Block E Drainage Area** 1.385

## Block F

### 205

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.24	0.9	0.21	
	0.24	Total	0.21	TIMP
		Divided by Total Area	0.90	100%

### 204

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.17	0.9	0.15	
	0.17	Total	0.15	TIMP
		Divided by Total Area	0.90	100%

### 203

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.10	0.25	0.02	
Building/Impervious Area	0.05	0.9	0.04	
	0.15	Total	0.07	TIMP
		Divided by Total Area	0.47	34%

### EXT1A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.04	0.25	0.01	
Building/Impervious Area	0.00	0.9	0.00	
	0.04	Total	0.01	TIMP
		Divided by Total Area	0.25	0%

### 206

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.50	0.9	0.45	
	0.50	Total	0.45	TIMP
		Divided by Total Area	0.90	100%

### U206A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.02	0.25	0.00	
Building/Impervious Area	0.04	0.9	0.04	
	0.06	Total	0.04	TIMP
		Divided by Total Area	0.70	69%

### 210

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.04	0.25	0.01	
Building/Impervious Area	0.10	0.9	0.09	
	0.13	Total	0.09	TIMP
		Divided by Total Area	0.72	73%

<b>Total Landscape Area</b>			0.188	
<b>Total Impervious Area</b>			1.091	
<b>Total Block F Drainage Area</b>			1.279	

## Block G

### 211

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.10	0.9	0.09	
	0.10	Total	0.09	TIMP
		Divided by Total Area	0.90	100%

### 212

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.02	0.25	0.00	
Building/Impervious Area	0.17	0.9	0.15	
	0.19	Total	0.16	TIMP
		Divided by Total Area	0.84	90%

### 208

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.03	0.25	0.01	
Building/Impervious Area	0.02	0.9	0.01	
	0.05	Total	0.02	TIMP
		Divided by Total Area	0.47	34%

### 213A

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.05	0.25	0.01	
Building/Impervious Area	0.09	0.9	0.09	
	0.14	Total	0.10	TIMP
		Divided by Total Area	0.69	67%

### 213

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.00	0.25	0.00	
Building/Impervious Area	0.62	0.9	0.56	
	0.62	Total	0.56	TIMP
		Divided by Total Area	0.90	100%

### EXT1B

Composite RC Value	Area [ha]	RC	RC * Area	
Landscaping	0.01	0.25	0.00	
Building/Impervious Area	0.00	0.9	0.00	
	0.01	Total	0.00	TIMP
		Divided by Total Area	0.25	0%

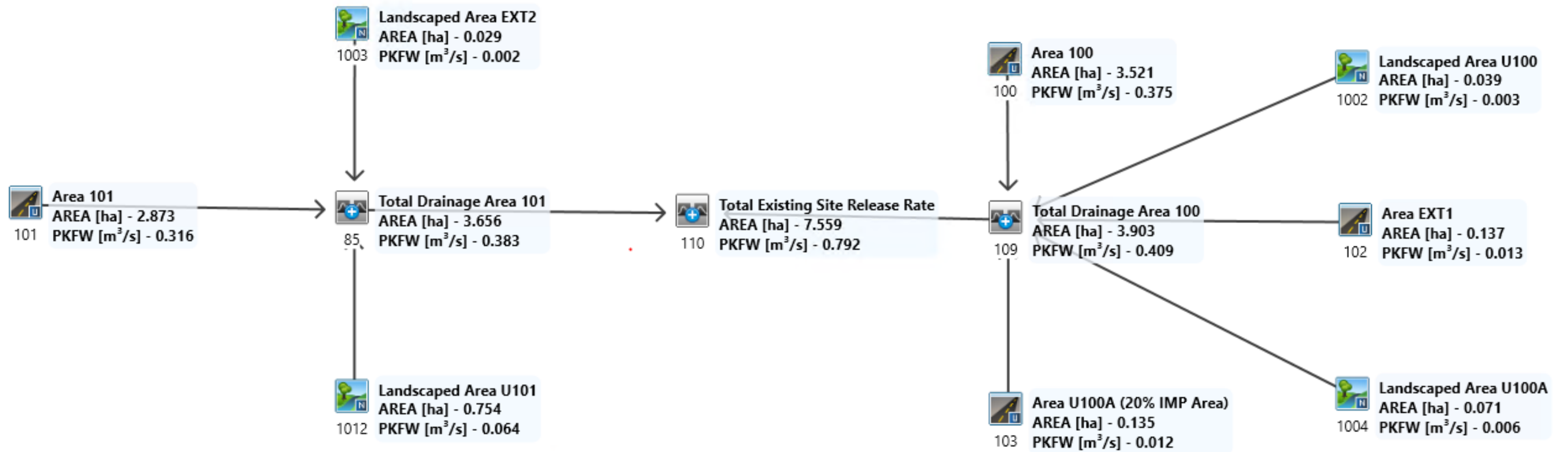
**Total Landscape Area** 0.109

**Total Impervious Area** 1.001

**Total Block G Drainage Area** 1.110



# PRE-DEVELOPMENT VO6 MODEL SCHEMATIC





```

=====
=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  VV    I   SSSSS UUUUU A   A  LLLLL
  
```

```

000  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
  
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\1add86de-7f1f-4784-a8e6-7e9588c

Summary filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\1add86de-7f1f-4784-a8e6-7e9588c

DATE: 10-25-2023

TIME: 12:15:59

USER:

COMMENTS: PRE-DEVELOPMENT MODEL RESULTS 2-100 YEAR, 12-HOUR AES STORMS (RUN 1-6)

```

-----
-----
*****
** SIMULATION : Run 1           **
*****
  
```

READ STORM

Filename: C:\Users\PTTrinidad-Rhodium\AppData\Local\Temp\



Ptotal= 42.00 mm

6d76bfc7-d732-4d8c-a16f-19b5f915f930\3999fb4

Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	7.14	6.50	2.94	9.75	0.42
0.25	0.42	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	1.68	10.50	0.42
1.00	0.42	4.25	19.32	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	0.84	11.50	0.42
2.00	0.42	5.25	5.46	8.50	0.84	11.75	0.42
2.25	2.52	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84		
2.75	2.52	6.00	5.46	9.25	0.42		
3.00	2.52	6.25	2.94	9.50	0.42		

CALIB

NASHYD ( 1012)

ID= 1 DT= 5.0 min

Area (ha)= 0.75 Curve Number (CN)= 85.0

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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42



1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.021 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 16.699

TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.398

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

-----			
CALIB			
NASHYD ( 1003)			
ID= 1 DT= 5.0 min			
-----			
Area	(ha)=	0.03	Curve Number (CN)= 85.0
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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42





0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 16.668

TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.397

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

CALIB			
STANDHYD ( 0101)	Area (ha)=	2.87	
ID= 1 DT= 5.0 min	Total Imp(%)=	88.00	Dir. Conn.(%)= 88.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		2.53	0.34



Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	138.40	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max. Eff. Inten. (mm/hr)= 19.32 10.50



Storage over (min)	5.00	25.00	
Storage Coeff. (min)=	5.99 (ii)	23.38 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.19	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.14	0.01	0.143 (iii)
TIME TO PEAK (hrs)=	5.25	5.42	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	38.08
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.91

- (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.

-----				
ADD HYD ( 0085)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.001	5.25	16.67
+ ID2= 2 ( 0101):	2.87	0.143	5.25	38.08
=====				
ID = 3 ( 0085):	2.90	0.144	5.25	37.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
ADD HYD ( 0085)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0085):	2.90	0.144	5.25	37.87
+ ID2= 2 ( 1012):	0.75	0.021	5.25	16.70
=====				
ID = 1 ( 0085):	3.66	0.165	5.25	33.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
NASHYD ( 1002)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	0.04	Curve Number (CN)= 85.0
	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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 16.676

TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.397



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

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| CALIB |
| NASHYD ( 1004) | Area (ha)= 0.07 Curve Number (CN)= 85.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.20

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42



2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 16.689

TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.397

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

CALIB  
STANDHYD ( 0100)  
ID= 1 DT= 5.0 min

Area (ha)= 3.52  
Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.82	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	153.21	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42



1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	25.00
Storage Coeff. (min)=	6.37 (ii)	23.75 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.18	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.15	0.02	0.166 (iii)
TIME TO PEAK (hrs)=	5.25	5.42	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	36.14
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.86

- (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.

CALIB	
STANDHYD ( 0102)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 41.10 Dir. Conn.(%)= 41.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.08
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00



Length	(m)=	30.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	2.40 (ii)	19.79 (ii)





Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	26.63
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.63

\*\*\*\*\* 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.

CALIB	
STANDHYD ( 0103)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.00	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42		
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42		
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42		
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42		
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42		
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42		
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42		
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42		
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42		
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42		
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42		
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42		
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42		
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42		



1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	2.39 (ii)	19.78 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	21.48
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.51

\*\*\*\*\* 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\* = 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.

-----  
 | ADD HYD ( 0109) |



1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	3.52	0.166	5.25	36.14
+ ID2= 2 ( 1002):	0.04	0.001	5.25	16.68
=====				
ID = 3 ( 0109):	3.56	0.167	5.25	35.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0109):	3.56	0.167	5.25	35.93
+ ID2= 2 ( 1004):	0.07	0.002	5.25	16.69
=====				
ID = 1 ( 0109):	3.63	0.169	5.25	35.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	3.63	0.169	5.25	35.55
+ ID2= 2 ( 0102):	0.14	0.005	5.25	26.63
=====				
ID = 3 ( 0109):	3.77	0.174	5.25	35.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0109):	3.77	0.174	5.25	35.23
+ ID2= 2 ( 0103):	0.14	0.004	5.25	21.48
=====				
ID = 1 ( 0109):	3.90	0.178	5.25	34.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
------------------------------	--------------	----------------	----------------	--------------



ID1= 1 ( 0109):	3.90	0.178	5.25	34.75
+ ID2= 2 ( 0085):	3.66	0.165	5.25	33.50
=====				
ID = 3 ( 0110):	7.56	0.342	5.25	34.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V   V   I   SSSSS   U   U   A   L           (v 6.2.2015)
V   V   I   SS     U   U   A A   L
V   V   I   SS     U   U   AAAAA L
V   V   I   SS     U   U   A   A   L
VV    I   SSSSS   UUUUU   A   A   LLLLL
    
```

```

000   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
    
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\c406c1b1-3321-4edc-a7cd-766ff93

Summary filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\c406c1b1-3321-4edc-a7cd-766ff93

DATE: 10-25-2023

TIME: 12:16:00

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*



\*\* SIMULATION : Run 2 \*\*  
 \*\*\*\*\*

-----  
 | READ STORM |  
Ptotal= 54.38 mm

Filename: C:\Users\PTTrinidad-Rhodus\AppData\Local\Temp\6d76bfc7-d732-4d8c-a16f-19b5f915f930\2031058a  
 Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	9.25	6.50	3.81	9.75	0.54
0.25	0.54	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	2.18	10.50	0.54
1.00	0.54	4.25	25.02	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	1.09	11.50	0.54
2.00	0.54	5.25	7.07	8.50	1.09	11.75	0.54
2.25	3.26	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09		
2.75	3.26	6.00	7.07	9.25	0.54		
3.00	3.26	6.25	3.81	9.50	0.54		

-----  
 | CALIB |  
 | NASHYD ( 1012) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.75 Curve Number (CN)= 85.0  
 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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54



0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.032 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 25.834  
 TOTAL RAINFALL (mm)= 54.380  
 RUNOFF COEFFICIENT = 0.475

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

CALIB			
NASHYD ( 1003)	Area (ha)= 0.03	Curve Number (CN)= 85.0	
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
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hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.801

TOTAL RAINFALL (mm)= 54.380

RUNOFF COEFFICIENT = 0.474

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



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| CALIB |
| STANDHYD ( 0101) | Area (ha)= 2.87
| ID= 1 DT= 5.0 min | Total Imp(%)= 88.00 Dir. Conn.(%)= 88.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.53	0.34
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.40	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54





2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14
over (min)	5.00	25.00
Storage Coeff. (min)=	5.40 (ii)	20.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.21	0.05

			*TOTALS*
PEAK FLOW (cms)=	0.18	0.01	0.188 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	50.08
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.92

- (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.

ADD HYD ( 0085)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.001	5.25	25.80
+ ID2= 2 ( 0101):	2.87	0.188	5.25	50.08
=====				
ID = 3 ( 0085):	2.90	0.189	5.25	49.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0085)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0085):	2.90	0.189	5.25	49.83
+ ID2= 2 ( 1012):	0.75	0.032	5.25	25.83
=====				
ID = 1 ( 0085):	3.66	0.221	5.25	44.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



CALIB			
NASHYD ( 1002)	Area (ha)=	0.04	Curve Number (CN)= 85.0
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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		



Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 25.816  
 TOTAL RAINFALL (mm)= 54.380  
 RUNOFF COEFFICIENT = 0.475

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

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 -----  
 | CALIB |  
 | NASHYD ( 1004) | Area (ha)= 0.07 Curve Number (CN)= 85.0  
 | 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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54



2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.003 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.827

TOTAL RAINFALL (mm)= 54.380

RUNOFF COEFFICIENT = 0.475

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

CALIB	
STANDHYD ( 0100)	Area (ha)= 3.52
ID= 1 DT= 5.0 min	Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.82	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	153.21	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54



0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14
over (min)	5.00	25.00
Storage Coeff. (min)=	5.74 (ii)	20.38 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.20	0.05

			*TOTALS*
PEAK FLOW (cms)=	0.20	0.03	0.220 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	47.88
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.88

- (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.

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| CALIB |



| STANDHYD ( 0102) | Area (ha)= 0.14  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 41.10 Dir. Conn.(%)= 41.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.22	40.00
Mannings n	=	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54



2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.17 (ii)	16.81 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	37.09
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.68

\*\*\*\*\* 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.

CALIB	
STANDHYD ( 0103)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 20.00    Dir. Conn.(%)= 20.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.00	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54



0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.16 (ii) 16.80 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 31.31  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 0.58

\*\*\*\*\* 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\* = 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.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0100):	3.52	0.220	5.25	47.88
+ ID2= 2 ( 1002):	0.04	0.002	5.25	25.82
=====				
ID = 3 ( 0109):	3.56	0.222	5.25	47.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0109):	3.56	0.222	5.25	47.64
+ ID2= 2 ( 1004):	0.07	0.003	5.25	25.83
=====				
ID = 1 ( 0109):	3.63	0.225	5.25	47.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0109):	3.63	0.225	5.25	47.21
+ ID2= 2 ( 0102):	0.14	0.007	5.25	37.09
=====				
ID = 3 ( 0109):	3.77	0.232	5.25	46.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0109):	3.77	0.232	5.25	46.84
+ ID2= 2 ( 0103):	0.14	0.006	5.25	31.31
=====				
ID = 1 ( 0109):	3.90	0.238	5.25	46.30



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0110)|
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	3.90	0.238	5.25	46.30
+ ID2= 2 ( 0085):	3.66	0.221	5.25	44.88
=====				
ID = 3 ( 0110):	7.56	0.458	5.25	45.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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=====
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
000 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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\d18f6c1a-1fb8-452f-924b-3a7b45c

Summary filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\d18f6c1a-1fb8-452f-924b-3a7b45c

DATE: 10-25-2023

TIME: 12:16:00

USER:



COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : Run 3 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\PTTrinidad-Rhodus\AppData Local\Temp\ 6d76bfc7-d732-4d8c-a16f-19b5f915f930\260dad37
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	10.66	6.50	4.39	9.75	0.63
0.25	0.63	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	2.51	10.50	0.63
1.00	0.63	4.25	28.84	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	1.25	11.50	0.63
2.00	0.63	5.25	8.15	8.50	1.25	11.75	0.63
2.25	3.76	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25		
2.75	3.76	6.00	8.15	9.25	0.63		
3.00	3.76	6.25	4.39	9.50	0.63		

CALIB	
NASHYD ( 1012)	Area (ha)= 0.75 Curve Number (CN)= 85.0
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63



0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.039 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 32.419

TOTAL RAINFALL (mm)= 62.710

RUNOFF COEFFICIENT = 0.517

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

CALIB					
NASHYD (1003)	Area	(ha)=	0.03	Curve Number (CN)=	85.0
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250



RUNOFF VOLUME (mm)= 32.389  
 TOTAL RAINFALL (mm)= 62.710  
 RUNOFF COEFFICIENT = 0.516

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

-----  
 -----  
 CALIB  
 STANDHYD ( 0101) | Area (ha)= 2.87  
 ID= 1 DT= 5.0 min | Total Imp(%)= 88.00 Dir. Conn.(%)= 88.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.53	0.34
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	138.40	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63



2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.11 (ii) 18.56 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.02 0.219 (iii)  
 TIME TO PEAK (hrs)= 5.25 5.33 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 58.20  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 0.93

- (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.

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ADD HYD ( 0085)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.002	5.25	32.39
+ ID2= 2 ( 0101):	2.87	0.219	5.25	58.20
=====				
ID = 3 ( 0085):	2.90	0.220	5.25	57.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD ( 0085)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)



ID1= 3 ( 0085):	2.90	0.220	5.25	57.94
+ ID2= 2 ( 1012):	0.75	0.039	5.25	32.42
=====				
ID = 1 ( 0085):	3.66	0.260	5.25	52.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 1002)	Area (ha)=	0.04	Curve Number (CN)= 85.0
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63





2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 32.397  
 TOTAL RAINFALL (mm)= 62.710  
 RUNOFF COEFFICIENT = 0.517

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

CALIB			
NASHYD ( 1004)	Area (ha)= 0.07	Curve Number (CN)= 85.0	
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63



1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.004 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 32.409  
 TOTAL RAINFALL (mm)= 62.710  
 RUNOFF COEFFICIENT = 0.517

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

CALIB	
STANDHYD ( 0100)	Area (ha)= 3.52
ID= 1 DT= 5.0 min	Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.82	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	153.21	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63



0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max. Eff. Inten. (mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	5.43 (ii)	18.88 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.20	0.06

			*TOTALS*
PEAK FLOW (cms)=	0.23	0.03	0.258 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	55.86
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.89

(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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0102) | Area (ha)= 0.14  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 41.10 Dir. Conn.(%)= 41.10  
 -----  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.08
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.22	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63



2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.05 (ii)	15.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	44.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.71

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0103)	Area (ha)=	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)=	20.00	Dir. Conn.(%)= 20.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.00	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

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



0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	2.04 (ii)	15.49 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.01	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	38.26
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.61



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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
     CN\* = 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.

```

-----
| ADD HYD ( 0109) |
| 1 + 2 = 3      |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0100):  3.52  0.258   5.25   55.86
+ ID2= 2 ( 1002):  0.04  0.002   5.25   32.40
=====
ID = 3 ( 0109):  3.56  0.260   5.25   55.60
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0109) |
| 3 + 2 = 1      |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0109):  3.56  0.260   5.25   55.60
+ ID2= 2 ( 1004):  0.07  0.004   5.25   32.41
=====
ID = 1 ( 0109):  3.63  0.264   5.25   55.15
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0109) |
| 1 + 2 = 3      |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0109):  3.63  0.264   5.25   55.15
+ ID2= 2 ( 0102):  0.14  0.008   5.25   44.41
=====
ID = 3 ( 0109):  3.77  0.272   5.25   54.76
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0109) |
  
```



	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
3 + 2 = 1				
-----				
ID1= 3 ( 0109):	3.77	0.272	5.25	54.76
+ ID2= 2 ( 0103):	0.14	0.007	5.25	38.26
=====				
ID = 1 ( 0109):	3.90	0.280	5.25	54.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ADD HYD ( 0110)				
1 + 2 = 3				
-----				
ID1= 1 ( 0109):	3.90	0.280	5.25	54.19
+ ID2= 2 ( 0085):	3.66	0.260	5.25	52.68
=====				
ID = 3 ( 0110):	7.56	0.539	5.25	53.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS     U   U   A A  L
V   V   I   SS     U   U   AAAAA L
V   V   I   SS     U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL

000   TTTTT  TTTTT  H   H   Y   Y   M   M   000   TM
0   0   T     T     H   H   Y   Y   MM  MM  0   0
0   0   T     T     H   H   Y     M   M   0   0
000   T     T     H   H   Y     M   M   000
    
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\55e3b69d-a9b0-4885-b2b0-fe07fc3

Summary filename:

C:\Users\PTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\55e3b69d-a9b0-4885-b2b0-fe07fc3





DATE: 10-25-2023

TIME: 12:15:59

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----  
 \*\*\*\*\*  
 \*\* SIMULATION : Run 4 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\PTTrinidad-Rhodium\AppData Local\Temp\ 6d76bfc7-d732-4d8c-a16f-19b5f915f930\c56db858
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	12.43	6.50	5.12	9.75	0.73
0.25	0.73	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	2.92	10.50	0.73
1.00	0.73	4.25	33.63	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	1.46	11.50	0.73
2.00	0.73	5.25	9.50	8.50	1.46	11.75	0.73
2.25	4.39	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46		
2.75	4.39	6.00	9.50	9.25	0.73		
3.00	4.39	6.25	5.12	9.50	0.73		

CALIB	Area (ha)= 0.75	Curve Number (CN)= 85.0
NASHYD ( 1012)	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.049 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.990  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.561



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

```

-----
| CALIB |
| NASHYD ( 1003) | Area (ha)= 0.03 Curve Number (CN)= 85.0
| 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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73



3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.962  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.560

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0101) |  
ID= 1 DT= 5.0 min

Area (ha)= 2.87  
 Total Imp(%)= 88.00 Dir. Conn.(%)= 88.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.53	0.34
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	138.40	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73



1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 4.80 (ii) 9.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.22 0.11

\*TOTALS\*

PEAK FLOW (cms)= 0.24 0.02 0.259 (iii)  
 TIME TO PEAK (hrs)= 5.25 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 68.37  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.94

\*\*\*\*\* 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.

```

-----
| ADD HYD ( 0085) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1003):	0.03	0.002	5.25	40.96
+ ID2= 2 ( 0101):	2.87	0.259	5.25	68.37
=====				
ID = 3 ( 0085):	2.90	0.261	5.25	68.10



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0085)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0085):	2.90	0.261	5.25	68.10
+ ID2= 2 ( 1012):	0.75	0.049	5.25	40.99
=====				
ID = 1 ( 0085):	3.66	0.311	5.25	62.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Curve Number (CN)=
NASHYD ( 1002)	0.04	85.0
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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73



2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.003 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.971  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.560

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

CALIB			
NASHYD ( 1004)	Area (ha)= 0.07	Curve Number (CN)= 85.0	
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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73



1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.005 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 40.983

TOTAL RAINFALL (mm)= 73.100

RUNOFF COEFFICIENT = 0.561

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

-----  
 | CALIB |  
 | STANDHYD ( 0100) | Area (ha)= 3.52  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.82	0.70
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	153.21	40.00
Mannings n	=	0.013	0.250

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





----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.10 (ii) 17.43 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

PEAK FLOW (cms)= 0.26 0.04 \*TOTALS\* 0.305 (iii)



TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	65.89
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	0.90

- (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.

CALIB			
STANDHYD ( 0102)	Area (ha)=	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)=	41.10	Dir. Conn.(%)= 41.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73



1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.93 (ii) 14.26 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.010 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 53.77  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 0103) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.14  
 Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.00	40.00



Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.92 (ii) 14.25 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00



Unit Hyd. peak (cms)=	0.31	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.01	0.009 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	47.22
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	0.65

\*\*\*\*\* 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\* = 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.

```

-----
| ADD HYD ( 0109) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	3.52	0.305	5.25	65.89
+ ID2= 2 ( 1002):	0.04	0.003	5.25	40.97
=====				
ID = 3 ( 0109):	3.56	0.308	5.25	65.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0109) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0109):	3.56	0.308	5.25	65.62
+ ID2= 2 ( 1004):	0.07	0.005	5.25	40.98
=====				
ID = 1 ( 0109):	3.63	0.312	5.25	65.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0109) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	3.63	0.312	5.25	65.14
+ ID2= 2 ( 0102):	0.14	0.010	5.25	53.77



=====

ID = 3 ( 0109):      3.77   0.323      5.25   64.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-----

| ADD HYD ( 0109) |

| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0109):	3.77	0.323	5.25	64.72
+ ID2= 2 ( 0103):	0.14	0.009	5.25	47.22
=====				
ID = 1 ( 0109):	3.90	0.332	5.25	64.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-----

| ADD HYD ( 0110) |

| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	3.90	0.332	5.25	64.12
+ ID2= 2 ( 0085):	3.66	0.311	5.25	62.51
=====				
ID = 3 ( 0110):	7.56	0.642	5.25	63.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

=====

```

V  V  I  SSSSS  U  U  A  L                      (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL
    
```

```

000  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
    
```

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



Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voim.dat

Output filename:

C:\Users\PTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\6846db57-6a69-4bf8-9b3b-d317268

Summary filename:

C:\Users\PTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\6846db57-6a69-4bf8-9b3b-d317268

DATE: 10-25-2023

TIME: 12:15:59

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : Run 5 \*\*  
 \*\*\*\*\*

READ STORM Ptotal= 80.82 mm	Filename: C:\Users\PTrinidad-Rhodium\AppData\Local\Temp\6d76bfc7-d732-4d8c-a16f-19b5f915f930\46d51674 Comments: 50 Year 12 Hour AES (Bloor, TRCA)
--------------------------------	--

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	13.74	6.50	5.66	9.75	0.81
0.25	0.81	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	3.23	10.50	0.81
1.00	0.81	4.25	37.17	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	1.62	11.50	0.81
2.00	0.81	5.25	10.50	8.50	1.62	11.75	0.81
2.25	4.85	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62		
2.75	4.85	6.00	10.50	9.25	0.81		
3.00	4.85	6.25	5.66	9.50	0.81		



CALIB			
NASHYD ( 1012)	Area (ha)=	0.75	Curve Number (CN)= 85.0
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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		





Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.057 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 47.559

TOTAL RAINFALL (mm)= 80.820

RUNOFF COEFFICIENT = 0.588

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

CALIB		Area (ha)= 0.03		Curve Number (CN)= 85.0	
NASHYD ( 1003)		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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81



2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 47.527  
 TOTAL RAINFALL (mm)= 80.820  
 RUNOFF COEFFICIENT = 0.588

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

CALIB	
STANDHYD ( 0101)	Area (ha)= 2.87
ID= 1 DT= 5.0 min	Total Imp(%)= 88.00 Dir. Conn.(%)= 88.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.53	0.34
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.40	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81



0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.73  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 4.61 (ii) 9.34 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.22 0.12

\*TOTALS\*

PEAK FLOW (cms)= 0.26 0.03 0.288 (iii)  
 TIME TO PEAK (hrs)= 5.25 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 75.96  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.94

\*\*\*\*\* 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.



-----				
ADD HYD ( 0085)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.002	5.25	47.53
+ ID2= 2 ( 0101):	2.87	0.288	5.25	75.96
=====				
ID = 3 ( 0085):	2.90	0.290	5.25	75.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
ADD HYD ( 0085)				
3 + 2 = 1				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0085):	2.90	0.290	5.25	75.67
+ ID2= 2 ( 1012):	0.75	0.057	5.25	47.56
=====				
ID = 1 ( 0085):	3.66	0.347	5.25	69.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
NASHYD ( 1002)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	0.04	Curve Number	(CN)= 85.0
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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81



1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.003 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 47.542  
 TOTAL RAINFALL (mm)= 80.820  
 RUNOFF COEFFICIENT = 0.588

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

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CALIB			
NASHYD ( 1004)	Area (ha)= 0.07	Curve Number (CN)= 85.0	
ID= 1 DT= 5.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.20		
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81



0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.005 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 47.550

TOTAL RAINFALL (mm)= 80.820

RUNOFF COEFFICIENT = 0.588

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

CALIB	
STANDHYD ( 0100)	Area (ha)= 3.52
ID= 1 DT= 5.0 min	Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.82	0.70
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	153.21	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		



Max.Eff.Inten.(mm/hr)=	37.17	28.43	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.90 (ii)	16.57 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.29	0.05	0.340 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	73.38
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.91

\*\*\*\*\* 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.

CALIB	
STANDHYD ( 0102)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 41.10 Dir. Conn.(%)= 41.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.22	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81





0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.85 (ii) 13.52 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.012 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 60.81  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.75

\*\*\*\*\* 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.



CALIB			
STANDHYD ( 0103)	Area (ha)=	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)=	20.00	Dir. Conn.(%)= 20.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.00	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81



2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.84 (ii) 13.52 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.01 0.011 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 54.03  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.67

\*\*\*\*\* 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\* = 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.

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-----
| ADD HYD ( 0109) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	3.52	0.340	5.25	73.38
+ ID2= 2 ( 1002):	0.04	0.003	5.25	47.54
=====				
ID = 3 ( 0109):	3.56	0.343	5.25	73.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0109) |
| 3 + 2 = 1 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0109):	3.56	0.343	5.25	73.10
+ ID2= 2 ( 1004):	0.07	0.005	5.25	47.55
=====				
ID = 1 ( 0109):	3.63	0.348	5.25	72.60



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0109):	3.63	0.348	5.25	72.60
+ ID2= 2 ( 0102):	0.14	0.012	5.25	60.81
=====				
ID = 3 ( 0109):	3.77	0.360	5.25	72.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0109)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0109):	3.77	0.360	5.25	72.17
+ ID2= 2 ( 0103):	0.14	0.011	5.25	54.03
=====				
ID = 1 ( 0109):	3.90	0.370	5.25	71.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0109):	3.90	0.370	5.25	71.54
+ ID2= 2 ( 0085):	3.66	0.347	5.25	69.88
=====				
ID = 3 ( 0110):	7.56	0.717	5.25	70.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

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



000 T T H H Y M M 000  
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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\f7ad03e0-aec2-4f10-9784-ba897c3

Summary filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\f7ad03e0-aec2-4f10-9784-ba897c3

DATE: 10-25-2023

TIME: 12:16:00

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : Run 6 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\PTTrinidad-Rhodium\AppData\Local\Temp\6d76bfc7-d732-4d8c-a16f-19b5f915f930\14a946a
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	15.05	6.50	6.20	9.75	0.89
0.25	0.89	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	3.54	10.50	0.89
1.00	0.89	4.25	40.71	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89



1.75	0.89	5.00	40.71	8.25	1.77	11.50	0.89
2.00	0.89	5.25	11.51	8.50	1.77	11.75	0.89
2.25	5.31	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77		
2.75	5.31	6.00	11.51	9.25	0.89		
3.00	5.31	6.25	6.20	9.50	0.89		

CALIB			
NASHYD ( 1012)	Area (ha)=	0.75	Curve Number (CN)= 85.0
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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89



2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.144

PEAK FLOW (cms)= 0.064 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 54.264  
 TOTAL RAINFALL (mm)= 88.540  
 RUNOFF COEFFICIENT = 0.613

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

CALIB			
NASHYD ( 1003)	Area (ha)= 0.03	Curve Number (CN)= 85.0	
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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89



1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 54.239  
 TOTAL RAINFALL (mm)= 88.540  
 RUNOFF COEFFICIENT = 0.613

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

-----  
 | CALIB |  
 | STANDHYD ( 0101) | Area (ha)= 2.87  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 88.00 Dir. Conn.(%)= 88.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.53	0.34
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	138.40	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	5.31	6.250	11.51	9.33	0.89





0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.40
over (min)	5.00	10.00
Storage Coeff. (min)=	4.45 (ii)	9.00 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.23	0.12

			*TOTALS*
PEAK FLOW (cms)=	0.29	0.03	0.316 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	83.56
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.94

\*\*\*\*\* 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.

ADD HYD ( 0085)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 1003):	0.03	0.002	5.25	54.24
+ ID2= 2 ( 0101):	2.87	0.316	5.25	83.56
=====				
ID = 3 ( 0085):	2.90	0.318	5.25	83.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0085)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0085):	2.90	0.318	5.25	83.26
+ ID2= 2 ( 1012):	0.75	0.064	5.25	54.26
=====				
ID = 1 ( 0085):	3.66	0.383	5.25	77.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.04	Curve Number (CN)=	85.0
NASHYD ( 1002)	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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89



0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.003 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 54.246

TOTAL RAINFALL (mm)= 88.540

RUNOFF COEFFICIENT = 0.613

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

-----			
-----			
CALIB			
NASHYD ( 1004)	Area (ha)=	0.07	Curve Number (CN)= 85.0
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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.014

PEAK FLOW (cms)= 0.006 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 54.255

TOTAL RAINFALL (mm)= 88.540

RUNOFF COEFFICIENT = 0.613



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

```

-----
| CALIB |
| STANDHYD ( 0100) | Area (ha)= 3.52
| ID= 1 DT= 5.0 min | Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      2.82      0.70
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      153.21      40.00
Mannings n =      0.013      0.250

```

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

```

----- 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 | 3.167    5.31 | 6.250   11.51 | 9.33    0.89
0.167    0.00 | 3.250    5.31 | 6.333    6.20 | 9.42    0.89
0.250    0.00 | 3.333   15.05 | 6.417    6.20 | 9.50    0.89
0.333    0.89 | 3.417   15.05 | 6.500    6.20 | 9.58    0.89
0.417    0.89 | 3.500   15.05 | 6.583    6.20 | 9.67    0.89
0.500    0.89 | 3.583   15.05 | 6.667    6.20 | 9.75    0.89
0.583    0.89 | 3.667   15.05 | 6.750    6.20 | 9.83    0.89
0.667    0.89 | 3.750   15.05 | 6.833    6.20 | 9.92    0.89
0.750    0.89 | 3.833   15.05 | 6.917    6.20 | 10.00   0.89
0.833    0.89 | 3.917   15.05 | 7.000    6.20 | 10.08   0.89
0.917    0.89 | 4.000   15.05 | 7.083    6.20 | 10.17   0.89
1.000    0.89 | 4.083   15.05 | 7.167    6.20 | 10.25   0.89
1.083    0.89 | 4.167   15.05 | 7.250    6.20 | 10.33   0.89
1.167    0.89 | 4.250   15.05 | 7.333    3.54 | 10.42   0.89
1.250    0.89 | 4.333   40.71 | 7.417    3.54 | 10.50   0.89
1.333    0.89 | 4.417   40.71 | 7.500    3.54 | 10.58   0.89
1.417    0.89 | 4.500   40.71 | 7.583    3.54 | 10.67   0.89
1.500    0.89 | 4.583   40.71 | 7.667    3.54 | 10.75   0.89
1.583    0.89 | 4.667   40.71 | 7.750    3.54 | 10.83   0.89
1.667    0.89 | 4.750   40.71 | 7.833    3.54 | 10.92   0.89
1.750    0.89 | 4.833   40.71 | 7.917    3.54 | 11.00   0.89
1.833    0.89 | 4.917   40.71 | 8.000    3.54 | 11.08   0.89
1.917    0.89 | 5.000   40.71 | 8.083    3.54 | 11.17   0.89
2.000    0.89 | 5.083   40.71 | 8.167    3.54 | 11.25   0.89
2.083    0.89 | 5.167   40.71 | 8.250    3.54 | 11.33   0.89
2.167    0.89 | 5.250   40.71 | 8.333    1.77 | 11.42   0.89
2.250    0.89 | 5.333   11.51 | 8.417    1.77 | 11.50   0.89
2.333    5.31 | 5.417   11.51 | 8.500    1.77 | 11.58   0.89

```



2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	20.00
Storage Coeff. (min)=	4.73 (ii)	15.85 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.22	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.32	0.06	0.375 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	80.90
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.91

\*\*\*\*\* 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.

CALIB	
STANDHYD ( 0102)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 41.10   Dir. Conn.(%)= 41.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.08
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89



0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	1.78 (ii)	12.90 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.01	0.013 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	67.94
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

-----  
 -----  

CALIB	
STANDHYD ( 0103)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 20.00 Dir. Conn.(%)= 20.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.00	40.00
Mannings n	=	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89





2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.78 (ii) 12.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.01 0.012 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 60.95  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 0.69

\*\*\*\*\* 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\* = 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.

```

-----
| ADD HYD ( 0109) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0100):  3.52  0.375  5.25  80.90
+ ID2= 2 ( 1002):  0.04  0.003  5.25  54.25
=====
ID = 3 ( 0109):  3.56  0.378  5.25  80.61
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



-----					
ADD HYD ( 0109)					
3 + 2 = 1					
-----					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0109):	3.56	0.378	5.25	80.61	
+ ID2= 2 ( 1004):	0.07	0.006	5.25	54.25	
=====					
ID = 1 ( 0109):	3.63	0.384	5.25	80.10	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-----					
ADD HYD ( 0109)					
1 + 2 = 3					
-----					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0109):	3.63	0.384	5.25	80.10	
+ ID2= 2 ( 0102):	0.14	0.013	5.25	67.94	
=====					
ID = 3 ( 0109):	3.77	0.397	5.25	79.65	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-----					
ADD HYD ( 0109)					
3 + 2 = 1					
-----					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0109):	3.77	0.397	5.25	79.65	
+ ID2= 2 ( 0103):	0.14	0.012	5.25	60.95	
=====					
ID = 1 ( 0109):	3.90	0.409	5.25	79.01	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-----					
ADD HYD ( 0110)					
1 + 2 = 3					
-----					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0109):	3.90	0.409	5.25	79.01	
+ ID2= 2 ( 0085):	3.66	0.383	5.25	77.28	
=====					
ID = 3 ( 0110):	7.56	0.792	5.25	78.17	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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FINISH

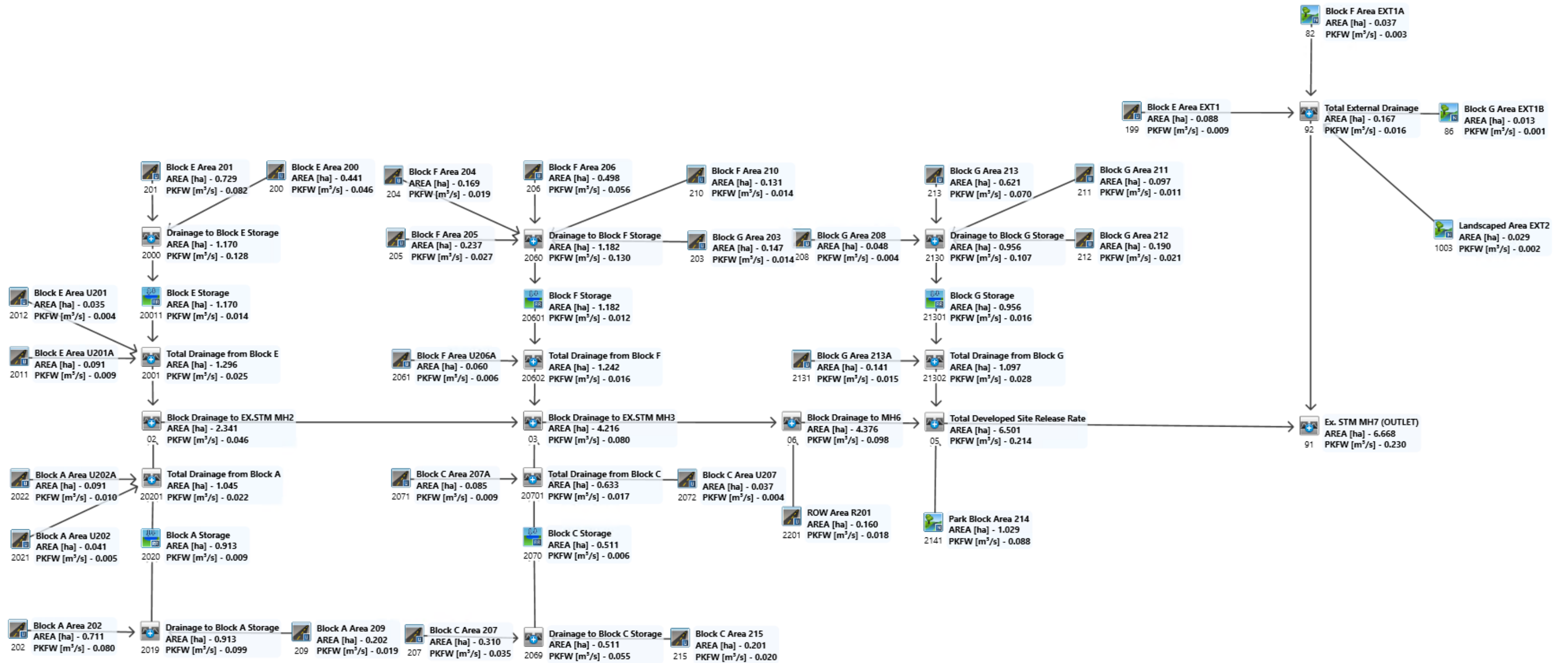
=====



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# POST-DEVELOPMENT VO6 MODEL SCHEMATIC





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=====
=====
V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS     U   U   A A  L
V   V   I   SS     U   U  AAAAA L
V   V   I   SS     U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL
    
```

```

000  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
    
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\9c239607-f927-4a41-9dd4-dbd1b0f

Summary filename:

C:\Users\PTTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\9c239607-f927-4a41-9dd4-dbd1b0f

DATE: 10-25-2023

TIME: 12:20:08

USER:

COMMENTS: POST-DEVELOPMENT MODEL RESULTS 2-100 YEAR, 12-HOUR AES STORMS (RUN 1-6)

```

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*****
** SIMULATION : Run 1           **
*****
    
```

| READ STORM |

Filename: C:\Users\PTTrinidad-Rhodus\AppData



ata\Local\Temp\  
040575ce-0e4a-400f-8d35-0395d2b4194d\f3999fb4

Ptotal= 42.00 mm Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	7.14	6.50	2.94	9.75	0.42
0.25	0.42	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	1.68	10.50	0.42
1.00	0.42	4.25	19.32	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	0.84	11.50	0.42
2.00	0.42	5.25	5.46	8.50	0.84	11.75	0.42
2.25	2.52	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84		
2.75	2.52	6.00	5.46	9.25	0.42		
3.00	2.52	6.25	2.94	9.50	0.42		

CALIB	Area (ha)=	0.04	Curve Number (CN)=	85.0
NASHYD ( 0082)	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	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42



1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.001 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 16.676  
 TOTAL RAINFALL (mm)= 42.000  
 RUNOFF COEFFICIENT = 0.397

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

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-----			
CALIB			
NASHYD ( 0086)	Area (ha)=	0.01	Curve Number (CN)= 85.0
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	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42



0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.000 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 16.573

TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.395

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

CALIB	
STANDHYD ( 0199)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 61.80 Dir. Conn.(%)= 61.80

IMPERVIOUS PERVIOUS (i)





Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.18	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		



Max.Eff.Inten.(mm/hr)=	19.32	10.50	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.10 (ii)	19.49 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	30.74
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.73

\*\*\*\*\* 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.

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CALIB			
NASHYD ( 1003)	Area (ha)=	0.03	Curve Number (CN)= 85.0
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	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42



1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.001 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 16.668  
 TOTAL RAINFALL (mm)= 42.000  
 RUNOFF COEFFICIENT = 0.397

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

-----

ADD HYD ( 0092)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.001	5.25	16.67
+ ID2= 2 ( 0199):	0.09	0.004	5.25	30.74
=====				
ID = 3 ( 0092):	0.12	0.004	5.25	27.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0092)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0092):	0.12	0.004	5.25	27.24



+ ID2= 2 ( 0082):	0.04	0.001	5.25	16.68
=====				
ID = 1 ( 0092):	0.15	0.006	5.25	24.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0092)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0092):	0.15	0.006	5.25	24.69
+ ID2= 2 ( 0086):	0.01	0.000	5.25	16.57
=====				
ID = 3 ( 0092):	0.17	0.006	5.25	24.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 2141)	Area (ha)=	1.03	Curve Number (CN)= 85.0
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	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42



1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.028 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 16.699  
 TOTAL RAINFALL (mm)= 42.000  
 RUNOFF COEFFICIENT = 0.398

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

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 -----  
 | CALIB |  
 | STANDHYD ( 0201) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.73  
 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.72	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	69.71	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42



0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max. Eff. Inten. (mm/hr)=	19.32	10.93
over (min)	5.00	10.00
Storage Coeff. (min)=	3.97 (ii)	6.14 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.24	0.15

			*TOTALS*
PEAK FLOW (cms)=	0.04	0.00	0.039 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

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CALIB			
STANDHYD ( 0200)	Area (ha)=	0.44	
ID= 1 DT= 5.0 min	Total Imp(%)=	67.40	Dir. Conn.(%)= 67.40

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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.30	0.14
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	54.22	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42



2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.42 (ii) 20.80 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.019 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.42 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 33.06  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.79

\*\*\*\*\* 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.

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-----
| ADD HYD ( 2000) |
| 1 + 2 = 3 |
-----
| AREA QPEAK TPEAK R.V. |
| (ha) (cms) (hrs) (mm) |
| ID1= 1 ( 0200): 0.44 0.019 5.25 33.06 |
| + ID2= 2 ( 0201): 0.73 0.039 5.25 40.75 |
|=====|
| ID = 3 ( 2000): 1.17 0.058 5.25 37.85 |
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| RESERVOIR( 20011) | 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    |    0.0140    0.0755

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2000)	1.170	0.058	5.25	37.85
OUTFLOW: ID= 1 ( 20011)	1.170	0.006	7.33	36.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.83  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0339

CALIB			
STANDHYD ( 2011)	Area (ha)=	0.09	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42



1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	2.13 (ii)	19.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	32.58
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.78

\*\*\*\*\* 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.

-----  
 | CALIB |  
 | STANDHYD ( 2012) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.04  
 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.28	40.00
Mannings n =	0.013	0.250



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

---- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	5.00
Storage Coeff. (min)=	1.60 (ii)	3.77 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.32	0.25



				*TOTALS*
PEAK FLOW	(cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK	(hrs)=	4.83	5.25	5.25
RUNOFF VOLUME	(mm)=	41.00	16.73	38.66
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.40	0.92

\*\*\*\*\* 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.

-----				
ADD HYD ( 2001)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2001):	1.17	0.006	7.33	36.69
+ ID2= 2 ( 2011):	0.09	0.004	5.25	32.58
=====				
ID = 3 ( 2001):	1.26	0.009	5.25	36.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
ADD HYD ( 2001)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2001):	1.26	0.009	5.25	36.39
+ ID2= 2 ( 2012):	0.04	0.002	5.25	38.66
=====				
ID = 1 ( 2001):	1.30	0.011	5.25	36.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
STANDHYD ( 0202)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	0.71		
Total Imp(%)	=	99.00	Dir. Conn.(%)	= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	68.83	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	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	10.00
Storage Coeff. (min)=	3.94 (ii)	6.11 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00



Unit Hyd. peak (cms)=	0.24	0.15	
			*TOTALS*
PEAK FLOW (cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0209)	Area (ha)=	0.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	40.00	Dir. Conn.(%)= 40.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.08	0.12
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		36.70	40.00
Mannings n =		0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42



1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	25.00
Storage Coeff. (min)=	2.70 (ii)	20.09 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.29	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.42	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	26.37
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.63

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 2019) |  
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0202):	0.71	0.038	5.25	40.75



+ ID2= 2 ( 0209):	0.20	0.007	5.25	26.37
=====				
ID = 3 ( 2019):	0.91	0.045	5.25	37.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2020)	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	0.0090	0.0600

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2019)	0.913	0.045	5.25	37.57
OUTFLOW: ID= 1 ( 2020)	0.913	0.004	8.25	35.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.04  
 TIME SHIFT OF PEAK FLOW (min)=180.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0271

CALIB			
STANDHYD ( 2021)	Area (ha)=	0.04	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	16.49	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42





0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	5.00
Storage Coeff. (min)=	1.67 (ii)	3.84 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.32	0.25

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	38.66
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.92

\*\*\*\*\* 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.



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| CALIB |
| STANDHYD ( 2022) | Area (ha)= 0.09
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42



2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.13 (ii) 19.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 37.83  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.90

\*\*\*\*\* 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.

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ADD HYD ( 20201)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2020):	0.91	0.004	8.25	35.71
+ ID2= 2 ( 2021):	0.04	0.002	5.25	38.66
=====				
ID = 3 ( 20201):	0.95	0.005	5.25	35.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD ( 20201)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20201):	0.95	0.005	5.25	35.84
+ ID2= 2 ( 2022):	0.09	0.005	5.25	37.83
=====				
ID = 1 ( 20201):	1.04	0.010	5.25	36.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ADD HYD ( 0002)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2001):	1.30	0.011	5.25	36.45
+ ID2= 2 ( 20201):	1.04	0.010	5.25	36.01
ID = 3 ( 0002):	2.34	0.021	5.25	36.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.09
STANDHYD ( 2071)	Total Imp(%)=	72.00	Dir. Conn.(%)= 72.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	23.80	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42



1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.08 (ii) 19.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 33.13  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.79

\*\*\*\*\* 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 0207) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.31  
 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.31	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	45.46	40.00



Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	10.00
Storage Coeff. (min)=	3.07 (ii)	5.24 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00



Unit Hyd. peak (cms)=	0.27	0.16	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.017 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0215)	Area (ha)=	0.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	58.00	Dir. Conn.(%)= 58.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.12	0.08
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		36.61	40.00
Mannings n =		0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42



1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	25.00
Storage Coeff. (min)=	2.70 (ii)	20.08 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.29	0.05

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.42	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	30.74
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.73

\*\*\*\*\* 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.

-----				
ADD HYD ( 2069)				
1 + 2 = 3				
-----				
ID1= 1 ( 0207):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	0.31	0.017	5.25	40.75





+ ID2= 2 ( 0215):	0.20	0.008	5.25	30.74
=====				
ID = 3 ( 2069):	0.51	0.025	5.25	36.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2070)	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	0.0060	0.0325

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2069)	0.511	0.025	5.25	36.81
OUTFLOW: ID= 1 ( 2070)	0.511	0.003	7.33	34.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.76  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0144

CALIB			
STANDHYD ( 2072)	Area (ha)=	0.04	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.62	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42



0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	1.62 (ii)	19.00 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	31.42
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.75

\*\*\*\*\* 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.



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-----
| ADD HYD ( 20701) |
| 1 + 2 = 3 |
-----
                AREA    QPEAK    TPEAK    R.V.
                (ha)    (cms)    (hrs)    (mm)
    ID1= 1 ( 2070):  0.51  0.003    7.33    34.13
    + ID2= 2 ( 2071):  0.09  0.004    5.25    33.13
    =====
    ID = 3 ( 20701):  0.60  0.006    5.25    33.99
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 20701) |
| 3 + 2 = 1 |
-----
                AREA    QPEAK    TPEAK    R.V.
                (ha)    (cms)    (hrs)    (mm)
    ID1= 3 ( 20701):  0.60  0.006    5.25    33.99
    + ID2= 2 ( 2072):  0.04  0.002    5.25    31.42
    =====
    ID = 1 ( 20701):  0.63  0.008    5.25    33.84
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0204) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.17
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
    
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	33.57	40.00
Mannings n	=	0.013	0.250

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

```

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42



0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	5.00
Storage Coeff. (min)=	2.56 (ii)	4.73 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.29	0.22

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.



CALIB			
STANDHYD ( 0210)	Area (ha)=	0.13	
ID= 1 DT= 5.0 min	Total Imp(%)=	73.00	Dir. Conn.(%)= 73.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.04
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.55	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42



2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.37 (ii) 19.76 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.006 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 34.41  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0205) | Area (ha)= 0.24  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.23	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	39.75	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42



0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.93  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.83 (ii) 5.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.28 0.16

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.013 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 40.75  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.97

\*\*\*\*\* 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0206) | Area (ha)= 0.50  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	57.62	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42





2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.93  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.54 (ii) 5.71 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.26 0.15

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.00 0.027 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 40.75  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.97

\*\*\*\*\* 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0203) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.15  
 Total Imp(%)= 34.00 Dir. Conn.(%)= 34.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	31.30	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	2.46 (ii)	19.84 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	24.90
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.59



\*\*\*\*\* 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.

```

-----
| ADD HYD ( 2060) |
| 1 + 2 = 3      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0203):  0.15  0.005    5.25    24.90
+ ID2= 2 ( 0204):  0.17  0.009    5.25    40.75
=====
ID = 3 ( 2060):  0.32  0.014    5.25    33.38

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 3 + 2 = 1      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 2060):  0.32  0.014    5.25    33.38
+ ID2= 2 ( 0205):  0.24  0.013    5.25    40.75
=====
ID = 1 ( 2060):  0.55  0.027    5.25    36.54

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 1 + 2 = 3      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 2060):  0.55  0.027    5.25    36.54
+ ID2= 2 ( 0206):  0.50  0.027    5.25    40.75
=====
ID = 3 ( 2060):  1.05  0.053    5.25    38.53

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 3 + 2 = 1      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)

```



ID1= 3 ( 2060):	1.05	0.053	5.25	38.53
+ ID2= 2 ( 0210):	0.13	0.006	5.25	34.41
=====				
ID = 1 ( 2060):	1.18	0.059	5.25	38.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 20601)	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	0.0120	0.0785
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2060)	1.182	0.059	5.25	38.08
OUTFLOW: ID= 1 ( 20601)	1.182	0.005	7.75	36.67

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.17  
 TIME SHIFT OF PEAK FLOW (min)=150.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0355

CALIB			
STANDHYD ( 2061)	Area (ha)=	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	20.00	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42



0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.88 (ii) 19.26 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
TIME TO PEAK (hrs)= 4.83 5.33 5.25  
RUNOFF VOLUME (mm)= 41.00 16.73 32.25  
TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
RUNOFF COEFFICIENT = 0.98 0.40 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.



ADD HYD ( 20602)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20601):	1.18	0.005	7.75	36.67
+ ID2= 2 ( 2061):	0.06	0.003	5.25	32.25
=====				
ID = 3 ( 20602):	1.24	0.007	5.25	36.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0002):	2.34	0.021	5.25	36.25
+ ID2= 2 ( 20602):	1.24	0.007	5.25	36.46
=====				
ID = 3 ( 0003):	3.58	0.028	5.25	36.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0003):	3.58	0.028	5.25	36.33
+ ID2= 2 ( 20701):	0.63	0.008	5.25	33.84
=====				
ID = 1 ( 0003):	4.22	0.035	5.25	35.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.16
STANDHYD ( 2201)	Total Imp(%)=	99.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.16	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.250

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



---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.93  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.52 (ii) 4.69 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.29 0.22

PEAK FLOW (cms)= 0.01 0.00 \*TOTALS\* 0.009 (iii)



TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

-----				
ADD HYD ( 0006)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0003):	4.22	0.035	5.25	35.95
+ ID2= 2 ( 2201):	0.16	0.009	5.25	40.75
=====				
ID = 3 ( 0006):	4.38	0.044	5.25	36.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
STANDHYD ( 0208)				
ID= 1 DT= 5.0 min				
-----				
	Area (ha)=	0.05		
	Total Imp(%)=	34.00	Dir. Conn.(%)=	34.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	17.83	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	0.00	3.167	2.52	6.250	5.46	9.33	0.42	
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42	
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42	
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42	
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42	
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42	





0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.50
over (min)	5.00	20.00
Storage Coeff. (min)=	1.75 (ii)	19.14 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK (hrs)=	4.58	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	23.51
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.56

\*\*\*\*\* 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.

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| CALIB |
| STANDHYD ( 0211) | Area (ha)= 0.10
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	25.36	40.00
Mannings n	=	0.013	0.250

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42



2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	5.00
Storage Coeff. (min)=	2.16 (ii)	4.33 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.23

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

-----  
 | CALIB |  
 | STANDHYD ( 0213) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.62  
 Total Imp(%)= 99.00   Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.61		0.01
Dep. Storage (mm)=	1.00		5.00
Average Slope (%)=	1.00		2.00
Length (m)=	64.34		40.00
Mannings n =	0.013		0.250

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

----- 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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42



0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.93
over (min)	5.00	10.00
Storage Coeff. (min)=	3.78 (ii)	5.95 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.15

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.00	0.033 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.97

\*\*\*\*\* 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.

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CALIB			
STANDHYD ( 0212)	Area (ha)=	0.19	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.40	Dir. Conn.(%)= 90.40

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.17	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	35.63	40.00
Mannings n =	0.013	0.250

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42



2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.65 (ii) 20.04 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.42 5.25  
 RUNOFF VOLUME (mm)= 41.00 16.73 38.65  
 TOTAL RAINFALL (mm)= 42.00 42.00 42.00  
 RUNOFF COEFFICIENT = 0.98 0.40 0.92

\*\*\*\*\* 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.

-----

ADD HYD ( 2130)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0208):	0.05	0.002	5.25	23.51
+ ID2= 2 ( 0211):	0.10	0.005	5.25	40.75
=====				
ID = 3 ( 2130):	0.14	0.007	5.25	35.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 2130)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1				



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-----
              (ha)   (cms)   (hrs)   (mm)
      ID1= 3 ( 2130):  0.14  0.007   5.25   35.05
+ ID2= 2 ( 0212):  0.19  0.010   5.25   38.65
=====
      ID = 1 ( 2130):  0.33  0.016   5.25   37.10

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2130) |
| 1 + 2 = 3 |
-----
              AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
      ID1= 1 ( 2130):  0.33  0.016   5.25   37.10
+ ID2= 2 ( 0213):  0.62  0.033   5.25   40.75
=====
      ID = 3 ( 2130):  0.96  0.050   5.25   39.47

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| RESERVOIR( 21301) | 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   |   0.0160   0.0590
-----
              AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
INFLOW : ID= 2 ( 2130)  0.956   0.050   5.25   39.47
OUTFLOW: ID= 1 ( 21301) 0.956   0.007   7.25   38.50

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.73  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0269

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-----
| CALIB |
| STANDHYD ( 2131) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 67.30 Dir. Conn.(%)= 67.30
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              IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 0.09   0.05
Dep. Storage (mm)= 1.00   5.00
Average Slope (%)= 1.00   2.00
Length (m)= 30.66   40.00
Mannings n = 0.013   0.250

```

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



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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)= 19.32 10.50  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.43 (ii) 19.81 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.06

PEAK FLOW (cms)= 0.01 0.00 \*TOTALS\* 0.006 (iii)





TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	41.00	16.73	33.02
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.40	0.79

\*\*\*\*\* 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.

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-----
| ADD HYD ( 21302) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 21301):	0.96	0.007	7.25	38.50
+ ID2= 2 ( 2131):	0.14	0.006	5.25	33.02
=====				
ID = 3 ( 21302):	1.10	0.012	5.25	37.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0005) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0006):	4.38	0.044	5.25	36.13
+ ID2= 2 ( 21302):	1.10	0.012	5.25	37.80
=====				
ID = 3 ( 0005):	5.47	0.056	5.25	36.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0005) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0005):	5.47	0.056	5.25	36.46
+ ID2= 2 ( 2141):	1.03	0.028	5.25	16.70
=====				
ID = 1 ( 0005):	6.50	0.085	5.25	33.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



```

-----
| ADD HYD ( 0091) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
          ID1= 1 ( 0005):  6.50  0.085  5.25  33.33
          + ID2= 2 ( 0092):  0.17  0.006  5.25  24.06
          =====
          ID = 3 ( 0091):  6.67  0.091  5.25  33.10
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
=====
V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL
      000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
      0  0  T    T  H  H  Y  Y  MM  MM  0  0
      0  0  T    T  H  H  Y  M  M  0  0
      000  T    T  H  H  Y  M  M  000
    
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\7aaa5368-46da-4e23-b2f4-ef776c3

Summary filename:

C:\Users\PTTrinidad-Rhodus\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\7aaa5368-46da-4e23-b2f4-ef776c3

DATE: 10-25-2023

TIME: 12:20:09

USER:

COMMENTS: \_\_\_\_\_



\*\*\*\*\*  
 \*\* SIMULATION : Run 2 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\PTTrinidad-Rhodus\AppData Local\Temp\040575ce-0e4a-400f-8d35-0395d2b4194d\2031058a
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	9.25	6.50	3.81	9.75	0.54
0.25	0.54	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	2.18	10.50	0.54
1.00	0.54	4.25	25.02	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	1.09	11.50	0.54
2.00	0.54	5.25	7.07	8.50	1.09	11.75	0.54
2.25	3.26	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09		
2.75	3.26	6.00	7.07	9.25	0.54		
3.00	3.26	6.25	3.81	9.50	0.54		

CALIB	
NASHYD ( 0082)	Area (ha)= 0.04 Curve Number (CN)= 85.0
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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54



0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.816

TOTAL RAINFALL (mm)= 54.380

RUNOFF COEFFICIENT = 0.475

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

CALIB			
NASHYD ( 0086)	Area (ha)=	0.01	Curve Number (CN)= 85.0
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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.726

TOTAL RAINFALL (mm)= 54.380



RUNOFF COEFFICIENT = 0.473

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0199) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 61.80 Dir. Conn.(%)= 61.80  
 -----  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.18	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54



2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.90 (ii) 16.54 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 42.81  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 0.79

\*\*\*\*\* 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.

```

-----
| CALIB |
| NASHYD ( 1003) | Area (ha)= 0.03 Curve Number (CN)= 85.0
| 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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54



0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.801

TOTAL RAINFALL (mm)= 54.380

RUNOFF COEFFICIENT = 0.474

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

-----  
 | ADD HYD ( 0092) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1003):	0.03	0.001	5.25	25.80
+ ID2= 2 ( 0199):	0.09	0.005	5.25	42.81





=====  
 ID = 3 ( 0092): 0.12 0.006 5.25 38.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0092) |  
3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0092):	0.12	0.006	5.25	38.59
+ ID2= 2 ( 0082):	0.04	0.002	5.25	25.82
=====				
ID = 1 ( 0092):	0.15	0.008	5.25	35.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0092) |  
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0092):	0.15	0.008	5.25	35.51
+ ID2= 2 ( 0086):	0.01	0.001	5.25	25.73
=====				
ID = 3 ( 0092):	0.17	0.008	5.25	34.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 2141) | Area (ha)= 1.03 Curve Number (CN)= 85.0  
 | 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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54



0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.043 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 25.834

TOTAL RAINFALL (mm)= 54.380

RUNOFF COEFFICIENT = 0.475

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

CALIB	
STANDHYD ( 0201)	Area (ha)= 0.73
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.72	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	69.71	40.00



Mannings n = 0.013 0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.39  
over (min) 5.00 10.00  
Storage Coeff. (min)= 3.58 (ii) 5.54 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00



Unit Hyd. peak (cms)=	0.26	0.16	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.00	0.050 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB	Area (ha)=	0.44	
STANDHYD ( 0200)	Total Imp(%)=	67.40	Dir. Conn.(%)= 67.40
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.30	0.14
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	54.22	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54



1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14
over (min)	5.00	20.00
Storage Coeff. (min)=	3.08 (ii)	17.72 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.27	0.06

*TOTALS*			
PEAK FLOW (cms)=	0.02	0.01	0.026 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	44.39
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

-----				
ADD HYD ( 2000)				
1 + 2 = 3				
-----				
ID1= 1 ( 0200):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	0.44	0.026	5.25	44.39



+ ID2= 2 ( 0201):	0.73	0.050	5.25	53.10
=====				
ID = 3 ( 2000):	1.17	0.077	5.25	49.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 20011)	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	0.0140	0.0755

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2000)	1.170	0.077	5.25	49.82
OUTFLOW: ID= 1 ( 20011)	1.170	0.008	7.33	48.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.82  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0446

CALIB			
STANDHYD ( 2011)	Area (ha)=	0.09	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54



0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14
over (min)	5.00	20.00
Storage Coeff. (min)=	1.92 (ii)	16.56 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.06

			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	44.80
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.



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| CALIB |
| STANDHYD ( 2012) | Area (ha)= 0.04
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.28	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54





2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.39  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.44 (ii) 3.40 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.33 0.26

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.002 (iii)  
 TIME TO PEAK (hrs)= 4.58 5.25 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 51.49  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 0.95

\*\*\*\*\* 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.

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ADD HYD ( 2001)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20011):	1.17	0.008	7.33	48.65
+ ID2= 2 ( 2011):	0.09	0.005	5.25	44.80
=====				
ID = 3 ( 2001):	1.26	0.012	5.25	48.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD ( 2001)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2001):	1.26	0.012	5.25	48.37
+ ID2= 2 ( 2012):	0.04	0.002	5.25	51.49
=====				
ID = 1 ( 2001):	1.30	0.015	5.25	48.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



CALIB			
STANDHYD ( 0202)	Area (ha)=	0.71	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.70	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	68.83	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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54



2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39
over (min)	5.00	10.00
Storage Coeff. (min)=	3.55 (ii)	5.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.26	0.16

\*TOTALS\*

PEAK FLOW (cms)=	0.05	0.00	0.049 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB			
STANDHYD ( 0209)	Area (ha)=	0.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	40.00	Dir. Conn.(%)= 40.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.08	0.12
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		36.70	40.00
Mannings n =		0.013	0.250

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

----- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54



0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.44 (ii) 17.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 36.84  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 0.68

\*\*\*\*\* 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.

ADD HYD ( 2019)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0202):	0.71	0.049	5.25	53.10
+ ID2= 2 ( 0209):	0.20	0.010	5.25	36.84
=====				
ID = 3 ( 2019):	0.91	0.059	5.25	49.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2020)	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	0.0090	0.0600
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2019)	0.913	0.059	5.25	49.50
OUTFLOW: ID= 1 ( 2020)	0.913	0.005	8.25	47.64
PEAK FLOW REDUCTION [Qout/Qin](%)= 9.03 TIME SHIFT OF PEAK FLOW (min)=180.00 MAXIMUM STORAGE USED (ha.m.)= 0.0357				

CALIB	Area (ha)=	0.04
STANDHYD ( 2021)	Total Imp(%)=	99.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	99.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 0.04	0.00
Dep. Storage	(mm)= 1.00	5.00
Average Slope	(%)= 1.00	2.00
Length	(m)= 16.49	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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39
over (min)	5.00	5.00
Storage Coeff. (min)=	1.51 (ii)	3.46 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.33	0.26

			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	51.49
TOTAL RAINFALL (mm)=	54.38	54.38	54.38



RUNOFF COEFFICIENT = 0.98 0.48 0.95

\*\*\*\*\* 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.

-----  
 | CALIB |  
 | STANDHYD ( 2022) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.67	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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54



1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.92 (ii) 16.56 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.006 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 49.78  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 0.92

\*\*\*\*\* 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.

-----

ADD HYD ( 20201)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2020):	0.91	0.005	8.25	47.64
+ ID2= 2 ( 2021):	0.04	0.003	5.25	51.49
=====				
ID = 3 ( 20201):	0.95	0.007	5.25	47.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----





```

-----
| ADD HYD ( 20201) |
| 3 + 2 = 1 |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
    ID1= 3 ( 20201):  0.95  0.007   5.25  47.81
    + ID2= 2 ( 2022):  0.09  0.006   5.25  49.78
    =====
    ID = 1 ( 20201):  1.04  0.013   5.25  47.98
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0002) |
| 1 + 2 = 3 |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
    ID1= 1 ( 2001):  1.30  0.015   5.25  48.45
    + ID2= 2 ( 20201):  1.04  0.013   5.25  47.98
    =====
    ID = 3 ( 0002):  2.34  0.027   5.25  48.24
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 2071) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.09
Total Imp(%)= 72.00 Dir. Conn.(%)= 72.00
    
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	23.80	40.00
Mannings n	=	0.013	0.250

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54



0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.88 (ii) 16.52 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
TIME TO PEAK (hrs)= 4.83 5.33 5.25  
RUNOFF VOLUME (mm)= 53.38 25.88 45.63  
TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
RUNOFF COEFFICIENT = 0.98 0.48 0.84

\*\*\*\*\* 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.



CALIB			
STANDHYD ( 0207)	Area (ha)=	0.31	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.31	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	45.46	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54



2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.77 (ii)	4.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.28	0.22	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB			
STANDHYD ( 0215)	Area (ha)=	0.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	58.00	Dir. Conn.(%)= 58.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.12	0.08
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		36.61	40.00
Mannings n =		0.013	0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54



0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.43 (ii) 17.07 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 41.78  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 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.

ADD HYD ( 2069)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0207):	0.31	0.021	5.25	53.10
+ ID2= 2 ( 0215):	0.20	0.011	5.25	41.78
=====				
ID = 3 ( 2069):	0.51	0.033	5.25	48.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2070)	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	0.0060	0.0325
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2069)	0.511	0.033	5.25	48.64
OUTFLOW: ID= 1 ( 2070)	0.511	0.004	7.33	45.96

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.73  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0190

CALIB	Area (ha)=	0.04
STANDHYD ( 2072)	Total Imp(%)=	69.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.62	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	3.167	3.26		6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26		6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25		6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25		6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25		6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25		6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25		6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25		6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25		6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25		7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25		7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25		7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25		7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25		7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02		7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02		7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02		7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02		7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02		7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02		7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02		7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02		8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02		8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02		8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02		8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02		8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07		8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07		8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07		8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07		8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07		8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07		8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07		8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07		9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07		9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07		9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07		9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.46 (ii) 16.10 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.002 (iii)  
TIME TO PEAK (hrs)= 4.58 5.33 5.25  
RUNOFF VOLUME (mm)= 53.38 25.88 43.25  
TOTAL RAINFALL (mm)= 54.38 54.38 54.38



RUNOFF COEFFICIENT = 0.98 0.48 0.80

\*\*\*\*\* 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.

```

-----
| ADD HYD ( 20701) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 2070):  0.51  0.004    7.33   45.96
+ ID2= 2 ( 2071):  0.09  0.005    5.25   45.63
=====
ID = 3 ( 20701):  0.60  0.008    5.25   45.92

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 20701) |
| 3 + 2 = 1 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 20701):  0.60  0.008    5.25   45.92
+ ID2= 2 ( 2072):  0.04  0.002    5.25   43.25
=====
ID = 1 ( 20701):  0.63  0.010    5.25   45.76

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0204) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.17
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.17	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	33.57	40.00
Mannings n =	0.013	0.250

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





---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.39  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.31 (ii) 4.26 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.30 0.23

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.012 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 53.10



TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB	Area (ha)=	0.13	
STANDHYD ( 0210)	Total Imp(%)=	73.00	Dir. Conn.(%)= 73.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.04
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.55	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54



1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.14 (ii) 16.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 4.83 5.33 5.25  
RUNOFF VOLUME (mm)= 53.38 25.88 45.91  
TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
RUNOFF COEFFICIENT = 0.98 0.48 0.84

\*\*\*\*\* 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.

-----  
| CALIB |  
| STANDHYD ( 0205) | Area (ha)= 0.24  
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.23	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	39.75	40.00
Mannings n =	0.013	0.250



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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39
over (min)	5.00	5.00
Storage Coeff. (min)=	2.56 (ii)	4.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.29	0.23



				*TOTALS*
PEAK FLOW	(cms)=	0.02	0.00	0.016 (iii)
TIME TO PEAK	(hrs)=	4.83	5.25	5.25
RUNOFF VOLUME	(mm)=	53.38	25.88	53.10
TOTAL RAINFALL	(mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT	=	0.98	0.48	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.

CALIB			
STANDHYD ( 0206)	Area	(ha)=	0.50
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.49	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	57.62	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54



1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.39  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.19 (ii) 5.15 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.27 0.16

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.00 0.034 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 53.10  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 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.

-----

CALIB	
STANDHYD ( 0203)	Area (ha)= 0.15
ID= 1 DT= 5.0 min	Total Imp(%)= 34.00 Dir. Conn.(%)= 34.00

Surface Area (ha)= IMPERVIOUS 0.05 PERVIOUS (i) 0.10



Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	31.30	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max. Eff. Inten. (mm/hr)= 25.02 16.14



over (min)	5.00	20.00	
Storage Coeff. (min)=	2.21 (ii)	16.85 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	35.15
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.65

\*\*\*\*\* 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.

-----

ADD HYD ( 2060)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0203):	0.15	0.007	5.25	35.15
+ ID2= 2 ( 0204):	0.17	0.012	5.25	53.10
=====				
ID = 3 ( 2060):	0.32	0.019	5.25	44.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 2060)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2060):	0.32	0.019	5.25	44.75
+ ID2= 2 ( 0205):	0.24	0.016	5.25	53.10
=====				
ID = 1 ( 2060):	0.55	0.035	5.25	48.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 2060)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2060):	0.55	0.035	5.25	48.33





```

+ ID2= 2 ( 0206):    0.50    0.034    5.25    53.10
=====
ID = 3 ( 2060):    1.05    0.070    5.25    50.59

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2060) |
| 3 + 2 = 1 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 2060):    1.05    0.070    5.25    50.59
+ ID2= 2 ( 0210):    0.13    0.008    5.25    45.91
=====
ID = 1 ( 2060):    1.18    0.078    5.25    50.07

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| RESERVOIR( 20601) | 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    0.0120    0.0785

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          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
INFLOW : ID= 2 ( 2060)    1.182    0.078    5.25    50.07
OUTFLOW: ID= 1 ( 20601)    1.182    0.007    7.67    48.67

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PEAK FLOW REDUCTION [Qout/Qin](%)= 9.19
TIME SHIFT OF PEAK FLOW (min)=145.00
MAXIMUM STORAGE USED (ha.m.)= 0.0467

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| CALIB |
| STANDHYD ( 2061) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00
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          IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)= 0.04    0.02
Dep. Storage (mm)= 1.00    5.00
Average Slope (%)= 1.00    2.00
Length (m)= 20.00    40.00
Mannings n = 0.013    0.250

```

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



## ----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max. Eff. Inten. (mm/hr)=	25.02	16.14
over (min)	5.00	20.00
Storage Coeff. (min)=	1.69 (ii)	16.33 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	43.36



TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.80

\*\*\*\*\* 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.

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-----
| ADD HYD ( 20602) |
| 1 + 2 = 3       |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 20601):  1.18  0.007   7.67   48.67
+ ID2= 2 ( 2061):  0.06  0.004   5.25   43.36
=====
ID = 3 ( 20602):  1.24  0.009   5.25   48.41

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0003) |
| 1 + 2 = 3       |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0002):  2.34  0.027   5.25   48.24
+ ID2= 2 ( 20602):  1.24  0.009   5.25   48.41
=====
ID = 3 ( 0003):  3.58  0.037   5.25   48.30

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0003) |
| 3 + 2 = 1       |
-----
                AREA   QPEAK   TPEAK   R.V.
                (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0003):  3.58  0.037   5.25   48.30
+ ID2= 2 ( 20701):  0.63  0.010   5.25   45.76
=====
ID = 1 ( 0003):  4.22  0.047   5.25   47.92

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB          |

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STANDHYD ( 2201) | Area (ha)= 0.16  
 ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.16	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54



2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.27 (ii)	4.23 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.24	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.011 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

-----				
ADD HYD ( 0006)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0003):	4.22	0.047	5.25	47.92
+ ID2= 2 ( 2201):	0.16	0.011	5.25	53.10
=====				
ID = 3 ( 0006):	4.38	0.058	5.25	48.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----			
CALIB			
STANDHYD ( 0208)			
ID= 1 DT= 5.0 min	Area (ha)=	0.05	
	Total Imp(%)=	34.00	Dir. Conn.(%)= 34.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.02	0.03
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		17.83	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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.14  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.58 (ii) 16.22 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

PEAK FLOW (cms)= 0.00 0.00 \*TOTALS\* 0.002 (iii)



TIME TO PEAK (hrs)=	4.58	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	33.65
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.62

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0211)	Area (ha)=	0.10	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	25.36	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	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54



1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)= 25.02 16.39  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.95 (ii) 3.91 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.25

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 53.38 25.88 53.10  
 TOTAL RAINFALL (mm)= 54.38 54.38 54.38  
 RUNOFF COEFFICIENT = 0.98 0.48 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.

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 | CALIB |  
 | STANDHYD ( 0213) | Area (ha)= 0.62  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.61	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00





Length	(m)=	64.34	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.39
over (min)	5.00	10.00
Storage Coeff. (min)=	3.41 (ii)	5.37 (ii)



Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.16	
			*TOTALS*
PEAK FLOW (cms)=	0.04	0.00	0.043 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

CALIB			
STANDHYD ( 0212)	Area (ha)=	0.19	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.40	Dir. Conn.(%)= 90.40

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	35.63	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54



1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14
over (min)	5.00	20.00
Storage Coeff. (min)=	2.39 (ii)	17.03 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	50.72
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	0.93

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 2130) |  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)



ID1= 1 ( 0208):	0.05	0.002	5.25	33.65
+ ID2= 2 ( 0211):	0.10	0.007	5.25	53.10
=====				
ID = 3 ( 2130):	0.14	0.009	5.25	46.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2130)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2130):	0.14	0.009	5.25	46.67
+ ID2= 2 ( 0212):	0.19	0.013	5.25	50.72
=====				
ID = 1 ( 2130):	0.33	0.022	5.25	48.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2130)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2130):	0.33	0.022	5.25	48.97
+ ID2= 2 ( 0213):	0.62	0.043	5.25	53.10
=====				
ID = 3 ( 2130):	0.96	0.065	5.25	51.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 21301)				
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	0.0160	0.0590

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2130)	0.956	0.065	5.25	51.66
OUTFLOW: ID= 1 ( 21301)	0.956	0.010	7.25	50.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.77  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0352

| CALIB |



STANDHYD ( 2131) | Area (ha)= 0.14  
 ID= 1 DT= 5.0 min | Total Imp(%)= 67.30 Dir. Conn.(%)= 67.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54



2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.14	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.19 (ii)	16.83 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.88	44.33
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.48	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.

```

-----
| ADD HYD ( 21302) |
| 1 + 2 = 3       |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 21301):	0.96	0.010	7.25	50.68
+ ID2= 2 ( 2131):	0.14	0.008	5.25	44.33
=====				
ID = 3 ( 21302):	1.10	0.017	5.25	49.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0005) |
| 1 + 2 = 3       |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0006):	4.38	0.058	5.25	48.11
+ ID2= 2 ( 21302):	1.10	0.017	5.25	49.86
=====				
ID = 3 ( 0005):	5.47	0.074	5.25	48.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



```

-----
| ADD HYD ( 0005) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0005):  5.47    0.074    5.25    48.46
+ ID2= 2 ( 2141):  1.03    0.043    5.25    25.83
=====
ID = 1 ( 0005):  6.50    0.118    5.25    44.88
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0091) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0005):  6.50    0.118    5.25    44.88
+ ID2= 2 ( 0092):  0.17    0.008    5.25    34.74
=====
ID = 3 ( 0091):  6.67    0.126    5.25    44.63
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A   L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A   L
VV    I   SSSSS  UUUUU  A   A   LLLLL

000  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
    
```

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

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

Output filename:

C:\Users\PTTrinidad-Rhodius\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\8239bf4b-05f1-4ffe-9c20-d00a0ae

Summary filename:



C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\8239bf4b-05f1-4ffe-9c20-d00a0ae

DATE: 10-25-2023

TIME: 12:20:09

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : Run 3 \*\*  
 \*\*\*\*\*

READ STORM  Ptotal= 62.71 mm	Filename: C:\Users\PTTrinidad-Rhodium\AppData\Local\Temp\040575ce-0e4a-400f-8d35-0395d2b4194d\260dad37 Comments: 10 Year 12 Hour AES (Bloor, TRCA)
------------------------------------	---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	10.66	6.50	4.39	9.75	0.63
0.25	0.63	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	2.51	10.50	0.63
1.00	0.63	4.25	28.84	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	1.25	11.50	0.63
2.00	0.63	5.25	8.15	8.50	1.25	11.75	0.63
2.25	3.76	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25		
2.75	3.76	6.00	8.15	9.25	0.63		
3.00	3.76	6.25	4.39	9.50	0.63		

CALIB NASHYD ( 0082) ID= 1 DT= 5.0 min	Area (ha)= 0.04    Curve Number (CN)= 85.0 Ia (mm)= 5.00    # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.20
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 32.397

TOTAL RAINFALL (mm)= 62.710



RUNOFF COEFFICIENT = 0.517

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

-----  
 -----  
 | CALIB |  
 | NASHYD ( 0086) | Area (ha)= 0.01 Curve Number (CN)= 85.0  
 | 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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63



2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.001 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 32.312  
 TOTAL RAINFALL (mm)= 62.710  
 RUNOFF COEFFICIENT = 0.515

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

CALIB	Area (ha)= 0.09
STANDHYD ( 0199)	Total Imp(%)= 61.80 Dir. Conn.(%)= 61.80
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.18	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63



1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.79 (ii) 15.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 50.47  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 0.80

\*\*\*\*\* 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.

-----			
-----			
CALIB			
NASHYD ( 1003)	Area (ha)=	0.03	Curve Number (CN)= 85.0
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 32.389

TOTAL RAINFALL (mm)= 62.710

RUNOFF COEFFICIENT = 0.516



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

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-----
| ADD HYD ( 0092) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1003):	0.03	0.002	5.25	32.39
+ ID2= 2 ( 0199):	0.09	0.006	5.25	50.47
=====				
ID = 3 ( 0092):	0.12	0.007	5.25	45.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0092) |
| 3 + 2 = 1 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0092):	0.12	0.007	5.25	45.98
+ ID2= 2 ( 0082):	0.04	0.002	5.25	32.40
=====				
ID = 1 ( 0092):	0.15	0.009	5.25	42.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0092) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0092):	0.15	0.009	5.25	42.70
+ ID2= 2 ( 0086):	0.01	0.001	5.25	32.31
=====				
ID = 3 ( 0092):	0.17	0.010	5.25	41.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 2141) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	1.03	Curve Number (CN)=	85.0
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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.054 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 32.419

TOTAL RAINFALL (mm)= 62.710

RUNOFF COEFFICIENT = 0.517

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



CALIB			
STANDHYD ( 0201)	Area (ha)=	0.73	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.72	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	69.71	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63





2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 20.20  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.38 (ii) 5.23 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.26 0.16

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.00 0.058 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 61.41  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0200) | Area (ha)= 0.44  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 67.40 Dir. Conn.(%)= 67.40  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.30	0.14
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.22	40.00
Mannings n	=	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63



0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	2.91 (ii)	16.36 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.28	0.06

			*TOTALS*
PEAK FLOW (cms)=	0.02	0.01	0.031 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	52.16
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

ADD HYD ( 2000)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0200):	0.44	0.031	5.25	52.16
+ ID2= 2 ( 0201):	0.73	0.058	5.25	61.41
=====				
ID = 3 ( 2000):	1.17	0.089	5.25	57.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 20011)	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	0.0140	0.0755
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2000)	1.170	0.089	5.25	57.93
OUTFLOW: ID= 1 ( 20011)	1.170	0.010	7.33	56.76

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.83  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0519

CALIB	Area (ha)=	0.09
STANDHYD ( 2011)	Total Imp(%)=	69.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	3.167	3.76		6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76		6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66		6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66		6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66		6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66		6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66		6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66		6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66		6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66		7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66		7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66		7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66		7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66		7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84		7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84		7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84		7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84		7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84		7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84		7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84		7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84		8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84		8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84		8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84		8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84		8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15		8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15		8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15		8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15		8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15		8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15		8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15		8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15		9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15		9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15		9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15		9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	1.81 (ii)	15.27 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	52.59
TOTAL RAINFALL (mm)=	62.71	62.71	62.71



RUNOFF COEFFICIENT = 0.98 0.52 0.84

\*\*\*\*\* 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.

-----  
 | CALIB |  
 | STANDHYD ( 2012) | Area (ha)= 0.04  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	15.28	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63



1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 20.20  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.36 (ii) 3.21 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.33 0.27

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 59.53  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 0.95

\*\*\*\*\* 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.

-----

ADD HYD ( 2001)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20011):	1.17	0.010	7.33	56.76
+ ID2= 2 ( 2011):	0.09	0.006	5.25	52.59
=====				
ID = 3 ( 2001):	1.26	0.014	5.25	56.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----



ADD HYD ( 2001)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2001):	1.26	0.014	5.25	56.46
+ ID2= 2 ( 2012):	0.04	0.003	5.25	59.53
=====				
ID = 1 ( 2001):	1.30	0.017	5.25	56.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.71
STANDHYD ( 0202)	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.70	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	68.83	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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63



1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	10.00
Storage Coeff. (min)=	3.36 (ii)	5.20 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.26	0.16

\*TOTALS\*

PEAK FLOW (cms)=	0.06	0.00	0.057 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

-----  
 | CALIB |  
 | STANDHYD ( 0209) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.20  
 Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.12
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	36.70	40.00
Mannings n =	0.013	0.250





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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	2.30 (ii)	15.76 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.07



				*TOTALS*
PEAK FLOW	(cms)=	0.01	0.01	0.012 (iii)
TIME TO PEAK	(hrs)=	4.83	5.33	5.25
RUNOFF VOLUME	(mm)=	61.71	32.48	44.12
TOTAL RAINFALL	(mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT	=	0.98	0.52	0.70

\*\*\*\*\* 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.

-----				
ADD HYD ( 2019)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0202):	0.71	0.057	5.25	61.41
+ ID2= 2 ( 0209):	0.20	0.012	5.25	44.12
=====				
ID = 3 ( 2019):	0.91	0.069	5.25	57.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
RESERVOIR( 2020)				
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	0.0090	0.0600

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2019)	0.913	0.069	5.25	57.59
OUTFLOW: ID= 1 ( 2020)	0.913	0.006	8.00	55.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.03  
 TIME SHIFT OF PEAK FLOW (min)=165.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0416

-----				
CALIB				
STANDHYD ( 2021)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	0.04		
Total Imp(%)	=	99.00	Dir. Conn.(%)	= 99.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	16.49	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		



Max.Eff.Inten.(mm/hr)=	28.84	20.20	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.42 (ii)	3.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.27	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	59.53
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.95

\*\*\*\*\* 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.

CALIB	
STANDHYD ( 2022)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63



0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	1.81 (ii)	15.27 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.07

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	57.88
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.92

\*\*\*\*\* 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.



ADD HYD ( 20201)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2020):	0.91	0.006	8.00	55.73
+ ID2= 2 ( 2021):	0.04	0.003	5.25	59.53
=====				
ID = 3 ( 20201):	0.95	0.008	5.25	55.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 20201)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20201):	0.95	0.008	5.25	55.90
+ ID2= 2 ( 2022):	0.09	0.007	5.25	57.88
=====				
ID = 1 ( 20201):	1.04	0.015	5.25	56.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0002)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2001):	1.30	0.017	5.25	56.54
+ ID2= 2 ( 20201):	1.04	0.015	5.25	56.07
=====				
ID = 3 ( 0002):	2.34	0.032	5.25	56.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 2071)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.09		
Total Imp(%)	=	72.00	Dir. Conn.(%)=	72.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	23.80	40.00
Mannings n	=	0.013	0.250

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



---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.78 (ii) 15.23 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 53.47



TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0207) | Area (ha)= 0.31  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.31	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	45.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63





1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	5.00
Storage Coeff. (min)=	2.62 (ii)	4.46 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.29	0.23

			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.025 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

CALIB	
STANDHYD ( 0215)	Area (ha)= 0.20
ID= 1 DT= 5.0 min	Total Imp(%)= 58.00    Dir. Conn.(%)= 58.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.12	0.08
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	36.61	40.00
Mannings n =	0.013	0.250



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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93
over (min)	5.00	20.00
Storage Coeff. (min)=	2.30 (ii)	15.75 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.07



				*TOTALS*
PEAK FLOW	(cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK	(hrs)=	4.83	5.33	5.25
RUNOFF VOLUME	(mm)=	61.71	32.48	49.39
TOTAL RAINFALL	(mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT	=	0.98	0.52	0.79

\*\*\*\*\* 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.

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-----
| ADD HYD ( 2069) |
| 1 + 2 = 3 |
-----

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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0207):	0.31	0.025	5.25	61.41
+ ID2= 2 ( 0215):	0.20	0.013	5.25	49.39
=====				
ID = 3 ( 2069):	0.51	0.038	5.25	56.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR( 2070) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
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OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.0060	0.0325

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2069)	0.511	0.038	5.25	56.68
OUTFLOW: ID= 1 ( 2070)	0.511	0.004	7.33	53.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.73  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0222

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| CALIB |
| STANDHYD ( 2072) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.04		
Total Imp(%)=	69.00	Dir. Conn.(%)=	69.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	15.62	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		



Max.Eff.Inten.(mm/hr)=	28.84	19.93	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.38 (ii)	14.83 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	50.78
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.81

\*\*\*\*\* 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.

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-----
| ADD HYD ( 20701) |
| 1 + 2 = 3 |
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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2070):	0.51	0.004	7.33	53.99
+ ID2= 2 ( 2071):	0.09	0.006	5.25	53.47
=====				
ID = 3 ( 20701):	0.60	0.009	5.25	53.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD ( 20701) |
| 3 + 2 = 1 |
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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20701):	0.60	0.009	5.25	53.92
+ ID2= 2 ( 2072):	0.04	0.003	5.25	50.78
=====				
ID = 1 ( 20701):	0.63	0.012	5.25	53.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0204) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.17		
Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	33.57	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63



3.083    3.76 | 6.167    8.15 | 9.250    1.25 |

Max.Eff.Inten.(mm/hr)=	28.84	20.20	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.18 (ii)	4.03 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.24	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

CALIB	
STANDHYD ( 0210)	Area (ha)= 0.13
ID= 1 DT= 5.0 min	Total Imp(%)= 73.00    Dir. Conn.(%)= 73.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.04
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.55	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63



0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.02 (ii) 15.47 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.01 0.00 0.009 (iii)  
TIME TO PEAK (hrs)= 4.83 5.33 5.25  
RUNOFF VOLUME (mm)= 61.71 32.48 53.76  
TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
RUNOFF COEFFICIENT = 0.98 0.52 0.86

\*\*\*\*\* 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.





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| CALIB |
| STANDHYD ( 0205) | Area (ha)= 0.24
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.23	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	39.75	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63



2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	5.00
Storage Coeff. (min)=	2.42 (ii)	4.26 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.30	0.23

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

CALIB			
STANDHYD ( 0206)	Area (ha)=	0.50	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.49	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	57.62	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63



0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	5.00
Storage Coeff. (min)=	3.02 (ii)	4.86 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.27	0.22

*TOTALS*			
PEAK FLOW (cms)=	0.04	0.00	0.040 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.42
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

```

-----
| CALIB |
| STANDHYD ( 0203) | Area (ha)= 0.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 34.00 Dir. Conn.(%)= 34.00
-----
  
```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.05          0.10
Dep. Storage    (mm)=          1.00          5.00
Average Slope   (%)=          1.00          2.00
Length          (m)=         31.30         40.00
Mannings n     =             0.013         0.250
  
```

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

```

----- 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 | 3.167   3.76 | 6.250   8.15 | 9.33   0.63
0.167   0.00 | 3.250   3.76 | 6.333   4.39 | 9.42   0.63
0.250   0.00 | 3.333  10.66 | 6.417   4.39 | 9.50   0.63
0.333   0.63 | 3.417  10.66 | 6.500   4.39 | 9.58   0.63
0.417   0.63 | 3.500  10.66 | 6.583   4.39 | 9.67   0.63
0.500   0.63 | 3.583  10.66 | 6.667   4.39 | 9.75   0.63
0.583   0.63 | 3.667  10.66 | 6.750   4.39 | 9.83   0.63
0.667   0.63 | 3.750  10.66 | 6.833   4.39 | 9.92   0.63
0.750   0.63 | 3.833  10.66 | 6.917   4.39 | 10.00  0.63
0.833   0.63 | 3.917  10.66 | 7.000   4.39 | 10.08  0.63
0.917   0.63 | 4.000  10.66 | 7.083   4.39 | 10.17  0.63
1.000   0.63 | 4.083  10.66 | 7.167   4.39 | 10.25  0.63
1.083   0.63 | 4.167  10.66 | 7.250   4.39 | 10.33  0.63
1.167   0.63 | 4.250  10.66 | 7.333   2.51 | 10.42  0.63
1.250   0.63 | 4.333  28.84 | 7.417   2.51 | 10.50  0.63
1.333   0.63 | 4.417  28.84 | 7.500   2.51 | 10.58  0.63
1.417   0.63 | 4.500  28.84 | 7.583   2.51 | 10.67  0.63
1.500   0.63 | 4.583  28.84 | 7.667   2.51 | 10.75  0.63
1.583   0.63 | 4.667  28.84 | 7.750   2.51 | 10.83  0.63
1.667   0.63 | 4.750  28.84 | 7.833   2.51 | 10.92  0.63
1.750   0.63 | 4.833  28.84 | 7.917   2.51 | 11.00  0.63
1.833   0.63 | 4.917  28.84 | 8.000   2.51 | 11.08  0.63
1.917   0.63 | 5.000  28.84 | 8.083   2.51 | 11.17  0.63
2.000   0.63 | 5.083  28.84 | 8.167   2.51 | 11.25  0.63
2.083   0.63 | 5.167  28.84 | 8.250   2.51 | 11.33  0.63
2.167   0.63 | 5.250  28.84 | 8.333   1.25 | 11.42  0.63
2.250   0.63 | 5.333   8.15 | 8.417   1.25 | 11.50  0.63
2.333   3.76 | 5.417   8.15 | 8.500   1.25 | 11.58  0.63
  
```



2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.09 (ii) 15.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.009 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 42.35  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 0.68

\*\*\*\*\* 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.

-----

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0203):	0.15	0.009	5.25	42.35
+ ID2= 2 ( 0204):	0.17	0.013	5.25	61.41
=====				
ID = 3 ( 2060):	0.32	0.022	5.25	52.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2060):	0.32	0.022	5.25	52.54
+ ID2= 2 ( 0205):	0.24	0.019	5.25	61.41



```
=====
ID = 1 ( 2060):    0.55    0.041    5.25    56.34
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| ADD HYD ( 2060) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 2060):    0.55    0.041    5.25    56.34
+ ID2= 2 ( 0206):    0.50    0.040    5.25    61.42
=====
ID = 3 ( 2060):    1.05    0.081    5.25    58.75
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| ADD HYD ( 2060) |
| 3 + 2 = 1 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 2060):    1.05    0.081    5.25    58.75
+ ID2= 2 ( 0210):    0.13    0.009    5.25    53.76
=====
ID = 1 ( 2060):    1.18    0.090    5.25    58.19
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| RESERVOIR( 20601) | 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    0.0120    0.0785
```

```

          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
INFLOW : ID= 2 ( 2060)    1.182    0.090    5.25    58.19
OUTFLOW: ID= 1 ( 20601)    1.182    0.008    7.58    56.79
```

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PEAK FLOW REDUCTION [Qout/Qin](%)= 9.19
TIME SHIFT OF PEAK FLOW (min)=140.00
MAXIMUM STORAGE USED (ha.m.)= 0.0543
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-----
| CALIB |
| STANDHYD ( 2061) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00
```



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	20.00	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63



3.083    3.76 | 6.167    8.15 | 9.250    1.25 |

Max.Eff.Inten.(mm/hr)=	28.84	19.93	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.60 (ii)	15.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	51.31
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
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.

-----

ADD HYD ( 20602)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20601):	1.18	0.008	7.58	56.79
+ ID2= 2 ( 2061):	0.06	0.004	5.25	51.31
=====				
ID = 3 ( 20602):	1.24	0.011	5.25	56.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0003)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0002):	2.34	0.032	5.25	56.33
+ ID2= 2 ( 20602):	1.24	0.011	5.25	56.52
=====				
ID = 3 ( 0003):	3.58	0.043	5.25	56.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

| ADD HYD ( 0003)|





3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
<del>ID1= 3 ( 0003):</del>	3.58	0.043	5.25	56.40
+ ID2= 2 ( 20701):	0.63	0.012	5.25	53.74
=====				
ID = 1 ( 0003):	4.22	0.055	5.25	56.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 2201)	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.16	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63



2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 20.20  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.15 (ii) 3.99 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.24

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.013 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 61.41  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 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.

-----

ADD HYD ( 0006)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0003):	4.22	0.055	5.25	56.00
+ ID2= 2 ( 2201):	0.16	0.013	5.25	61.41
=====				
ID = 3 ( 0006):	4.38	0.067	5.25	56.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

| CALIB |



STANDHYD ( 0208)	Area (ha)=	0.05		
ID= 1 DT= 5.0 min	Total Imp(%)=	34.00	Dir. Conn.(%)=	34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.83	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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63



2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.93	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.49 (ii)	14.95 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	40.71
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.65

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0211)	Area (ha)=	0.10	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	25.36	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	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63



0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	5.00
Storage Coeff. (min)=	1.84 (ii)	3.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.32	0.25

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.



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 -----  
 | CALIB |  
 | STANDHYD ( 0213) | Area (ha)= 0.62  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.61	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	64.34	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63



2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	20.20
over (min)	5.00	10.00
Storage Coeff. (min)=	3.22 (ii)	5.07 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.27	0.16

\*TOTALS\*

PEAK FLOW (cms)=	0.05	0.00	0.050 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	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.

CALIB	
STANDHYD ( 0212)	Area (ha)= 0.19
ID= 1 DT= 5.0 min	Total Imp(%)= 90.40   Dir. Conn.(%)= 90.40

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.17		0.02
Dep. Storage (mm)=	1.00		5.00
Average Slope (%)=	1.00		2.00
Length (m)=	35.63		40.00
Mannings n =	0.013		0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63



0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max. Eff. Inten. (mm/hr)=	28.84	20.20
over (min)	5.00	10.00
Storage Coeff. (min)=	2.26 (ii)	6.99 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.30	0.14

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.015 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	32.48	58.89
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.52	0.94

\*\*\*\*\* 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.

ADD HYD ( 2130)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0208):	0.05	0.003	5.25	40.71
+ ID2= 2 ( 0211):	0.10	0.008	5.25	61.41
=====				
ID = 3 ( 2130):	0.14	0.011	5.25	54.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2130)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2130):	0.14	0.011	5.25	54.56
+ ID2= 2 ( 0212):	0.19	0.015	5.25	58.89
=====				
ID = 1 ( 2130):	0.33	0.025	5.25	57.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2130)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2130):	0.33	0.025	5.25	57.03
+ ID2= 2 ( 0213):	0.62	0.050	5.25	61.41
=====				
ID = 3 ( 2130):	0.96	0.075	5.25	59.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 21301)	OVERFLOW IS OFF			
IN= 2---> OUT= 1	OUTFLOW	STORAGE	OUTFLOW	STORAGE
DT= 5.0 min	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0160	0.0590
	AREA	QPEAK	TPEAK	R.V.



	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2130)	0.956	0.075	5.25	59.88
OUTFLOW: ID= 1 ( 21301)	0.956	0.011	7.25	58.90

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.77  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0408

CALIB			
STANDHYD ( 2131)	Area (ha)=	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)=	67.30	Dir. Conn.(%)= 67.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63



2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)= 28.84 19.93  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.07 (ii) 15.52 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.33 5.25  
 RUNOFF VOLUME (mm)= 61.71 32.48 52.09  
 TOTAL RAINFALL (mm)= 62.71 62.71 62.71  
 RUNOFF COEFFICIENT = 0.98 0.52 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.

-----

ADD HYD ( 21302)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 21301):	0.96	0.011	7.25	58.90
+ ID2= 2 ( 2131):	0.14	0.010	5.25	52.09
=====				
ID = 3 ( 21302):	1.10	0.019	5.25	58.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----



ADD HYD ( 0005)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0006):		4.38	0.067	5.25	56.20
+ ID2= 2 ( 21302):		1.10	0.019	5.25	58.02
=====					
ID = 3 ( 0005):		5.47	0.087	5.25	56.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0005)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0005):		5.47	0.087	5.25	56.56
+ ID2= 2 ( 2141):		1.03	0.054	5.25	32.42
=====					
ID = 1 ( 0005):		6.50	0.141	5.25	52.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0091)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0005):		6.50	0.141	5.25	52.74
+ ID2= 2 ( 0092):		0.17	0.010	5.25	41.89
=====					
ID = 3 ( 0091):		6.67	0.151	5.25	52.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

  000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
  0  0  T  T  H  H  Y  Y  MM  MM  0  0
  0  0  T  T  H  H  Y  M  M  0  0
  000  T  T  H  H  Y  M  M  000
    
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\f8d35b2a-f232-41fc-95fd-ee08c51

Summary filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\f8d35b2a-f232-41fc-95fd-ee08c51

DATE: 10-25-2023

TIME: 12:20:10

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : Run 4 \*\*  
 \*\*\*\*\*

READ STORM  Ptotal= 73.10 mm	Filename: C:\Users\PTTrinidad-Rhodium\AppData\Local\Temp\040575ce-0e4a-400f-8d35-0395d2b4194d\c56db858 Comments: 25 Year 12 Hour AES (Bloor, TRCA)
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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	12.43	6.50	5.12	9.75	0.73
0.25	0.73	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	2.92	10.50	0.73
1.00	0.73	4.25	33.63	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	1.46	11.50	0.73
2.00	0.73	5.25	9.50	8.50	1.46	11.75	0.73
2.25	4.39	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46		



2.75	4.39	6.00	9.50	9.25	0.73
3.00	4.39	6.25	5.12	9.50	0.73

CALIB			
NASHYD ( 0082)	Area (ha)=	0.04	Curve Number (CN)= 85.0
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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73



2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.971  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.560

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

CALIB			
NASHYD ( 0086)	Area (ha)=	0.01	Curve Number (CN)= 85.0
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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73



1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.001 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.857  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.559

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

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 -----  
 | CALIB |  
 | STANDHYD ( 0199) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 61.80 Dir. Conn.(%)= 61.80  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.18	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73





0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.79
over (min)	5.00	15.00
Storage Coeff. (min)=	1.69 (ii)	14.02 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	60.18
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.

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-----
| CALIB |
| NASHYD ( 1003) | Area (ha)= 0.03 Curve Number (CN)= 85.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.20
  
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 4.39 | 6.250 9.50 | 9.33 0.73
0.167 0.00 | 3.250 4.39 | 6.333 5.12 | 9.42 0.73
0.250 0.00 | 3.333 12.43 | 6.417 5.12 | 9.50 0.73
0.333 0.73 | 3.417 12.43 | 6.500 5.12 | 9.58 0.73
0.417 0.73 | 3.500 12.43 | 6.583 5.12 | 9.67 0.73
0.500 0.73 | 3.583 12.43 | 6.667 5.12 | 9.75 0.73
0.583 0.73 | 3.667 12.43 | 6.750 5.12 | 9.83 0.73
0.667 0.73 | 3.750 12.43 | 6.833 5.12 | 9.92 0.73
0.750 0.73 | 3.833 12.43 | 6.917 5.12 | 10.00 0.73
0.833 0.73 | 3.917 12.43 | 7.000 5.12 | 10.08 0.73
0.917 0.73 | 4.000 12.43 | 7.083 5.12 | 10.17 0.73
1.000 0.73 | 4.083 12.43 | 7.167 5.12 | 10.25 0.73
1.083 0.73 | 4.167 12.43 | 7.250 5.12 | 10.33 0.73
1.167 0.73 | 4.250 12.43 | 7.333 2.92 | 10.42 0.73
1.250 0.73 | 4.333 33.63 | 7.417 2.92 | 10.50 0.73
1.333 0.73 | 4.417 33.63 | 7.500 2.92 | 10.58 0.73
1.417 0.73 | 4.500 33.63 | 7.583 2.92 | 10.67 0.73
1.500 0.73 | 4.583 33.63 | 7.667 2.92 | 10.75 0.73
1.583 0.73 | 4.667 33.63 | 7.750 2.92 | 10.83 0.73
1.667 0.73 | 4.750 33.63 | 7.833 2.92 | 10.92 0.73
1.750 0.73 | 4.833 33.63 | 7.917 2.92 | 11.00 0.73
1.833 0.73 | 4.917 33.63 | 8.000 2.92 | 11.08 0.73
1.917 0.73 | 5.000 33.63 | 8.083 2.92 | 11.17 0.73
2.000 0.73 | 5.083 33.63 | 8.167 2.92 | 11.25 0.73
2.083 0.73 | 5.167 33.63 | 8.250 2.92 | 11.33 0.73
2.167 0.73 | 5.250 33.63 | 8.333 1.46 | 11.42 0.73
2.250 0.73 | 5.333 9.50 | 8.417 1.46 | 11.50 0.73
2.333 4.39 | 5.417 9.50 | 8.500 1.46 | 11.58 0.73
2.417 4.39 | 5.500 9.50 | 8.583 1.46 | 11.67 0.73
2.500 4.39 | 5.583 9.50 | 8.667 1.46 | 11.75 0.73
2.583 4.39 | 5.667 9.50 | 8.750 1.46 | 11.83 0.73
2.667 4.39 | 5.750 9.50 | 8.833 1.46 | 11.92 0.73
2.750 4.39 | 5.833 9.50 | 8.917 1.46 | 12.00 0.73
2.833 4.39 | 5.917 9.50 | 9.000 1.46 | 12.08 0.73
  
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2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 40.962

TOTAL RAINFALL (mm)= 73.100

RUNOFF COEFFICIENT = 0.560

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

ADD HYD ( 0092)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 1003):	0.03	0.002	5.25	40.96	
+ ID2= 2 ( 0199):	0.09	0.007	5.25	60.18	
=====					
ID = 3 ( 0092):	0.12	0.009	5.25	55.40	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0092)					
3 + 2 = 1					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0092):	0.12	0.009	5.25	55.40	
+ ID2= 2 ( 0082):	0.04	0.002	5.25	40.97	
=====					
ID = 1 ( 0092):	0.15	0.012	5.25	51.92	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0092)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0092):	0.15	0.012	5.25	51.92	
+ ID2= 2 ( 0086):	0.01	0.001	5.25	40.86	
=====					
ID = 3 ( 0092):	0.17	0.012	5.25	51.06	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



CALIB				
NASHYD ( 2141)	Area (ha)=	1.03	Curve Number (CN)=	85.0
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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		



Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.067 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 40.990  
 TOTAL RAINFALL (mm)= 73.100  
 RUNOFF COEFFICIENT = 0.561

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

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 -----  
 | CALIB |  
 | STANDHYD ( 0201) | Area (ha)= 0.73  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.72	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	69.71	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73



1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	3.18 (ii)	4.92 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.27	0.22

\*TOTALS\*

PEAK FLOW (cms)=	0.07	0.00	0.068 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	71.79
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.

-----  
 | CALIB |  
 | STANDHYD ( 0200) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.44  
 Total Imp(%)= 67.40 Dir. Conn.(%)= 67.40

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.30	0.14
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	54.22	40.00
Mannings n =	0.013	0.250



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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.79
over (min)	5.00	20.00
Storage Coeff. (min)=	2.74 (ii)	15.07 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.29	0.07



				*TOTALS*
PEAK FLOW	(cms)=	0.03	0.01	0.037 (iii)
TIME TO PEAK	(hrs)=	5.08	5.25	5.25
RUNOFF VOLUME	(mm)=	72.10	41.07	61.96
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.56	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.

-----				
ADD HYD ( 2000)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.44	0.037	5.25	61.96
+ ID2= 2 ( 0201):	0.73	0.068	5.25	71.79
=====				
ID = 3 ( 2000):	1.17	0.104	5.25	68.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
RESERVOIR( 20011)				
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	0.0140	0.0755

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2000)	1.170	0.104	5.25	68.08
OUTFLOW: ID= 1 ( 20011)	1.170	0.011	7.33	66.91

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.83  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0610

-----				
CALIB				
STANDHYD ( 2011)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	0.09		
Total Imp(%)=	69.00	Dir. Conn.(%)=	69.00	





		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.67	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		



Max.Eff.Inten.(mm/hr)=	33.63	24.79	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.71 (ii)	14.04 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	62.42
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.

CALIB	
STANDHYD ( 2012)	Area (ha)= 0.04
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.28	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73



0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	1.28 (ii)	3.02 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.33	0.28

			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	69.60
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	0.95

\*\*\*\*\* 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.



ADD HYD ( 2001)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 20011):	1.17	0.011	7.33	66.91
+ ID2= 2 ( 2011):	0.09	0.008	5.25	62.42
=====				
ID = 3 ( 2001):	1.26	0.017	5.25	66.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2001)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 2001):	1.26	0.017	5.25	66.59
+ ID2= 2 ( 2012):	0.04	0.003	5.25	69.60
=====				
ID = 1 ( 2001):	1.30	0.020	5.25	66.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0202)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.71		
Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	68.83	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73



0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	3.16 (ii)	4.89 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.27	0.22

			*TOTALS*
PEAK FLOW (cms)=	0.07	0.00	0.066 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	71.79
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.



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| CALIB |
| STANDHYD ( 0209) | Area (ha)= 0.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.12
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	36.70	40.00
Mannings n	=	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73



2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.16 (ii) 14.49 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.015 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 53.44  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.73

\*\*\*\*\* 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.

ADD HYD ( 2019)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0202):	0.71	0.066	5.25	71.79
+ ID2= 2 ( 0209):	0.20	0.015	5.25	53.44
=====				
ID = 3 ( 2019):	0.91	0.081	5.25	67.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2020)	OVERFLOW IS OFF			
IN= 2----> OUT= 1	OUTFLOW	STORAGE	OUTFLOW	STORAGE
DT= 5.0 min	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0090	0.0600

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2019)	0.913	0.081	5.25	67.73
OUTFLOW: ID= 1 ( 2020)	0.913	0.007	7.75	65.87



PEAK FLOW REDUCTION [Qout/Qin](%)= 9.01  
 TIME SHIFT OF PEAK FLOW (min)=150.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0489

CALIB	Area (ha)=	0.04	
STANDHYD ( 2021)	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	16.49	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73





2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.34 (ii) 3.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.33 0.27

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 69.60  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.95

\*\*\*\*\* 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.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 2022) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00  
 -----  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.67	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.79
over (min)	5.00	15.00
Storage Coeff. (min)=	1.71 (ii)	14.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	68.04
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	0.93



\*\*\*\*\* 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.

ADD HYD ( 20201)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2020):	0.91	0.007	7.75	65.87
+ ID2= 2 ( 2021):	0.04	0.004	5.25	69.60
=====				
ID = 3 ( 20201):	0.95	0.010	5.25	66.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 20201)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20201):	0.95	0.010	5.25	66.03
+ ID2= 2 ( 2022):	0.09	0.008	5.25	68.04
=====				
ID = 1 ( 20201):	1.04	0.018	5.25	66.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0002)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2001):	1.30	0.020	5.25	66.67
+ ID2= 2 ( 20201):	1.04	0.018	5.25	66.21
=====				
ID = 3 ( 0002):	2.34	0.038	5.25	66.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.09
STANDHYD ( 2071)	Total Imp(%)=	72.00	Dir. Conn.(%)= 72.00
ID= 1 DT= 5.0 min			



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	23.80	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73



3.083    4.39 | 6.167    9.50 | 9.250    1.46 |

Max.Eff.Inten.(mm/hr)=		33.63	24.79	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.67 (ii)	14.00 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.32	0.08	
				*TOTALS*
PEAK FLOW (cms)=		0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=		4.83	5.25	5.25
RUNOFF VOLUME (mm)=		72.10	41.07	63.36
TOTAL RAINFALL (mm)=		73.10	73.10	73.10
RUNOFF COEFFICIENT =		0.99	0.56	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.

-----				
CALIB		Area (ha)=	0.31	
STANDHYD ( 0207)		Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00
ID= 1 DT= 5.0 min				
-----				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.31	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	45.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73



0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	2.46 (ii)	4.20 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.30	0.24

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	71.78
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.



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-----
| CALIB                               |
| STANDHYD ( 0215) | Area (ha)= 0.20 |
| ID= 1 DT= 5.0 min | Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.12	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	36.61	40.00
Mannings n	=	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73



2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.16 (ii) 14.49 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.016 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 59.03  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.81

\*\*\*\*\* 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.

ADD HYD ( 2069)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0207):	0.31	0.029	5.25	71.78
+ ID2= 2 ( 0215):	0.20	0.016	5.25	59.03
=====				
ID = 3 ( 2069):	0.51	0.045	5.25	66.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2070)	OVERFLOW IS OFF			
IN= 2----> OUT= 1	OUTFLOW	STORAGE	OUTFLOW	STORAGE
DT= 5.0 min	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0060	0.0325

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2069)	0.511	0.045	5.25	66.76
OUTFLOW: ID= 1 ( 2070)	0.511	0.005	7.33	64.08





PEAK FLOW REDUCTION [Qout/Qin](%)= 10.70  
 TIME-SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0261

CALIB			
STANDHYD ( 2072)	Area (ha)=	0.04	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.62	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73



2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.30 (ii) 13.63 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 60.29  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

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ADD HYD ( 20701)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2070):	0.51	0.005	7.33	64.08
+ ID2= 2 ( 2071):	0.09	0.007	5.25	63.36
=====				
ID = 3 ( 20701):	0.60	0.011	5.25	63.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD ( 20701)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)



ID1= 3 ( 20701):	0.60	0.011	5.25	63.98
+ ID2= 2 ( 2072):	0.04	0.003	5.25	60.29
=====				
ID = 1 ( 20701):	0.63	0.014	5.25	63.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0204)	Area (ha)=	0.17		
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	33.57	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73



2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.05 (ii) 3.79 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.25

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.016 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 71.78  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

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 | CALIB |  
 | STANDHYD ( 0210) | Area (ha)= 0.13  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 73.00 Dir. Conn.(%)= 73.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.04
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.55	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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.79
over (min)	5.00	15.00
Storage Coeff. (min)=	1.90 (ii)	14.23 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.011 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	63.67
TOTAL RAINFALL (mm)=	73.10	73.10	73.10



RUNOFF COEFFICIENT = 0.99 0.56 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.

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| CALIB |
| STANDHYD ( 0205) | Area (ha)= 0.24
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.23	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	39.75	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73



1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.27 (ii) 4.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.30 0.24

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.022 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 71.78  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

-----  
 | CALIB |  
 | STANDHYD ( 0206) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.50  
 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.49	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	57.62	40.00
Mannings n	=	0.013	0.250



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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	2.84 (ii)	4.57 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.28	0.23

\*TOTALS\*





PEAK FLOW	(cms)=	0.05	0.00	0.046 (iii)
TIME TO PEAK	(hrs)=	5.08	5.25	5.25
RUNOFF VOLUME	(mm)=	72.10	41.07	71.79
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.56	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.

CALIB	Area (ha)=	0.15	
STANDHYD ( 0203)	Total Imp(%)=	34.00	Dir. Conn.(%)= 34.00
ID= 1 DT= 5.0 min			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	31.30	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73



1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.97 (ii) 14.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.01 0.011 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 51.56  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.71

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 2060) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0203):	0.15	0.011	5.25	51.56
+ ID2= 2 ( 0204):	0.17	0.016	5.25	71.78

=====



ID = 3 ( 2060): 0.32 0.027 5.25 62.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 2060):  0.32  0.027  5.25  62.37
+ ID2= 2 ( 0205):  0.24  0.022  5.25  71.78
=====
ID = 1 ( 2060):  0.55  0.049  5.25  66.41

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 2060):  0.55  0.049  5.25  66.41
+ ID2= 2 ( 0206):  0.50  0.046  5.25  71.79
=====
ID = 3 ( 2060):  1.05  0.095  5.25  68.96

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2060) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 2060):  1.05  0.095  5.25  68.96
+ ID2= 2 ( 0210):  0.13  0.011  5.25  63.67
=====
ID = 1 ( 2060):  1.18  0.106  5.25  68.37

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 20601) | 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      0.0120      0.0785

          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 2060)  1.182      0.106      5.25      68.37

```



OUTFLOW: ID= 1 ( 20601)      1.182      0.010      7.50      66.96

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.18  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0638

-----  
 -----  
 CALIB  
 STANDHYD ( 2061) | Area (ha)= 0.06  
 ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	20.00	40.00
Mannings n	=	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73



2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.50 (ii) 13.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 62.42  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

-----

ADD HYD ( 20602)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20601):	1.18	0.010	7.50	66.96
+ ID2= 2 ( 2061):	0.06	0.005	5.25	62.42
=====				
ID = 3 ( 20602):	1.24	0.013	5.25	66.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

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



	(ha)	(cms)	(hrs)	(mm)
-----				
ID1= 1 ( 0002):	2.34	0.038	5.25	66.46
+ ID2= 2 ( 20602):	1.24	0.013	5.25	66.75
=====				
ID = 3 ( 0003):	3.58	0.051	5.25	66.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
ADD HYD ( 0003)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
-----				
ID1= 3 ( 0003):	3.58	0.051	5.25	66.56
+ ID2= 2 ( 20701):	0.63	0.014	5.25	63.77
=====				
ID = 1 ( 0003):	4.22	0.065	5.25	66.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
STANDHYD ( 2201)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	0.16		
Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 0.16	0.00
Dep. Storage	(mm)= 1.00	5.00
Average Slope	(%)= 1.00	2.00
Length	(m)= 32.66	40.00
Mannings n	= 0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73



1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	2.02 (ii)	3.76 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.25

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.015 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	71.78
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.

-----  
| ADD HYD ( 0006) |



1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	4.22	0.065	5.25	66.14
+ ID2= 2 ( 2201):	0.16	0.015	5.25	71.78
=====				
ID = 3 ( 0006):	4.38	0.080	5.25	66.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0208)	0.05	
ID= 1 DT= 5.0 min	Total Imp(%)= 34.00	Dir. Conn.(%)= 34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.83	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73





2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 24.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.40 (ii) 13.73 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 49.80  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 0.68

\*\*\*\*\* 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 0211) | Area (ha)= 0.10  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	25.36	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	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max. Eff. Inten. (mm/hr)=	33.63	25.08
over (min)	5.00	5.00
Storage Coeff. (min)=	1.73 (ii)	3.47 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.32	0.26

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25



RUNOFF VOLUME	(mm)=	72.10	41.07	71.79
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.56	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.

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CALIB	
STANDHYD ( 0213)	Area (ha)= 0.62
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.61	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	64.34	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73



1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 3.03 (ii) 4.77 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.27 0.22

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.00 0.058 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 72.10 41.07 71.79  
 TOTAL RAINFALL (mm)= 73.10 73.10 73.10  
 RUNOFF COEFFICIENT = 0.99 0.56 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 0212) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.19  
 Total Imp(%)= 90.40 Dir. Conn.(%)= 90.40

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.17	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	35.63	40.00



Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)= 33.63 25.08  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.13 (ii) 6.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00



Unit Hyd. peak (cms)=	0.31	0.14	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.017 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	69.11
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	0.95

\*\*\*\*\* 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.

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| ADD HYD ( 2130) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0208):	0.05	0.004	5.25	49.80
+ ID2= 2 ( 0211):	0.10	0.009	5.25	71.79
=====				
ID = 3 ( 2130):	0.14	0.013	5.25	64.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD ( 2130) |
| 3 + 2 = 1 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 2130):	0.14	0.013	5.25	64.51
+ ID2= 2 ( 0212):	0.19	0.017	5.25	69.11
=====				
ID = 1 ( 2130):	0.33	0.030	5.25	67.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2130) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 2130):	0.33	0.030	5.25	67.13
+ ID2= 2 ( 0213):	0.62	0.058	5.25	71.79
=====				
ID = 3 ( 2130):	0.96	0.088	5.25	70.16



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 21301)		OVERFLOW IS OFF			
IN= 2---> OUT= 1		OUTFLOW		STORAGE	
DT= 5.0 min		(cms)	(ha.m.)	(cms)	(ha.m.)
		0.0000	0.0000	0.0160	0.0590
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 2130)		0.956	0.088	5.25	70.16
OUTFLOW: ID= 1 ( 21301)		0.956	0.013	7.25	69.18
		PEAK FLOW REDUCTION [Qout/Qin](%)= 14.79			
		TIME SHIFT OF PEAK FLOW (min)=120.00			
		MAXIMUM STORAGE USED (ha.m.)= 0.0478			

CALIB		STANDHYD ( 2131)	
ID= 1 DT= 5.0 min		Area (ha)=	0.14
		Total Imp(%)=	67.30
		Dir. Conn.(%)=	67.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73



1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.79
over (min)	5.00	15.00
Storage Coeff. (min)=	1.94 (ii)	14.27 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	41.07	61.89
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.56	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.

-----  
| ADD HYD ( 21302)|





1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 21301):	0.96	0.013	7.25	69.18
+ ID2= 2 ( 2131):	0.14	0.012	5.25	61.89
=====				
ID = 3 ( 21302):	1.10	0.023	5.25	68.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0005) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0006):	4.38	0.080	5.25	66.35
+ ID2= 2 ( 21302):	1.10	0.023	5.25	68.24
=====				
ID = 3 ( 0005):	5.47	0.103	5.25	66.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0005) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0005):	5.47	0.103	5.25	66.73
+ ID2= 2 ( 2141):	1.03	0.067	5.25	40.99
=====				
ID = 1 ( 0005):	6.50	0.170	5.25	62.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0091) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0005):	6.50	0.170	5.25	62.65
+ ID2= 2 ( 0092):	0.17	0.012	5.25	51.06
=====				
ID = 3 ( 0091):	6.67	0.182	5.25	62.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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



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

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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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\fe54bca5-a7a9-4b94-9e0e-e331a7e

Summary filename:

C:\Users\PTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\fe54bca5-a7a9-4b94-9e0e-e331a7e

DATE: 10-25-2023

TIME: 12:20:10

USER:

COMMENTS: \_\_\_\_\_

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*****
** SIMULATION : Run 5 **
*****

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| READ STORM | Filename: C:\Users\PTrinidad-Rhodium\AppData\Local\Temp\
|            | 040575ce-0e4a-400f-8d35-0395d2b4194d\46d51674
| Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)
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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr



0.00	0.00	3.25	13.74	6.50	5.66	9.75	0.81
0.25	0.81	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	3.23	10.50	0.81
1.00	0.81	4.25	37.17	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	1.62	11.50	0.81
2.00	0.81	5.25	10.50	8.50	1.62	11.75	0.81
2.25	4.85	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62		
2.75	4.85	6.00	10.50	9.25	0.81		
3.00	4.85	6.25	5.66	9.50	0.81		

CALIB			
NASHYD ( 0082)	Area (ha)=	0.04	Curve Number (CN)= 85.0
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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81



1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.003 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 47.537  
 TOTAL RAINFALL (mm)= 80.820  
 RUNOFF COEFFICIENT = 0.588

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

CALIB			
NASHYD ( 0086)	Area (ha)= 0.01	Curve Number (CN)= 85.0	
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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81



1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 47.431

TOTAL RAINFALL (mm)= 80.820

RUNOFF COEFFICIENT = 0.587

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

-----  
 | CALIB |  
 | STANDHYD ( 0199) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 61.80 Dir. Conn.(%)= 61.80  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.18	40.00
Mannings n	=	0.013	0.250



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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.62 (ii)	13.29 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*



PEAK FLOW	(cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK	(hrs)=	4.83	5.25	5.25
RUNOFF VOLUME	(mm)=	79.82	47.65	67.45
TOTAL RAINFALL	(mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT	=	0.99	0.59	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.

CALIB			
NASHYD ( 1003)	Area (ha)=	0.03	Curve Number (CN)= 85.0
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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81



2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 47.527  
 TOTAL RAINFALL (mm)= 80.820  
 RUNOFF COEFFICIENT = 0.588

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

ADD HYD ( 0092)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):		0.03	0.002	5.25	47.53
+ ID2= 2 ( 0199):		0.09	0.008	5.25	67.45
=====					
ID = 3 ( 0092):		0.12	0.010	5.25	62.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0092)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0092):		0.12	0.010	5.25	62.50
+ ID2= 2 ( 0082):		0.04	0.003	5.25	47.54
=====					
ID = 1 ( 0092):		0.15	0.013	5.25	58.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.





-----				
ADD HYD ( 0092)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0092):	0.15	0.013	5.25	58.89
+ ID2= 2 ( 0086):	0.01	0.001	5.25	47.43
=====				
ID = 3 ( 0092):	0.17	0.014	5.25	58.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
NASHYD ( 2141)				
ID= 1 DT= 5.0 min				
-----				
Area	(ha)=	1.03	Curve Number	(CN)= 85.0
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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81



2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.078 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 47.559  
 TOTAL RAINFALL (mm)= 80.820  
 RUNOFF COEFFICIENT = 0.588

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

-----  
 CALIB  
 STANDHYD ( 0201)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 0.73  
 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.72	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	69.71	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81



0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	3.06 (ii)	4.73 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.27	0.22

			*TOTALS*
PEAK FLOW (cms)=	0.07	0.00	0.075 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	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.



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| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.44
| ID= 1 DT= 5.0 min | Total Imp(%)= 67.40 Dir. Conn.(%)= 67.40
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.30	0.14
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	54.22	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81



2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	2.63 (ii)	14.30 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.29	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.041 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	69.32
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.86

\*\*\*\*\* 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.

ADD HYD ( 2000)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0200):	0.44	0.041	5.25	69.32
+ ID2= 2 ( 0201):	0.73	0.075	5.25	79.49
=====				
ID = 3 ( 2000):	1.17	0.116	5.25	75.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 20011)	OVERFLOW IS OFF			
IN= 2----> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0140	0.0755

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2000)	1.170	0.116	5.25	75.66
OUTFLOW: ID= 1 ( 20011)	1.170	0.013	7.33	74.49



PEAK FLOW REDUCTION [Qout/Qin](%)= 10.82  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0678

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 CALIB  
 STANDHYD ( 2011) | Area (ha)= 0.09  
 ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.06	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81



2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.64 (ii) 13.31 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.009 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 69.78  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.86

\*\*\*\*\* 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 2012) | Area (ha)= 0.04  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	15.28	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	1.23 (ii)	2.90 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.33	0.28

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	77.07
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.95





\*\*\*\*\* 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.

ADD HYD ( 2001)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 20011):	1.17	0.013	7.33	74.49
+ ID2= 2 ( 2011):	0.09	0.009	5.25	69.78
=====				
ID = 3 ( 2001):	1.26	0.019	5.25	74.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2001)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 2001):	1.26	0.019	5.25	74.15
+ ID2= 2 ( 2012):	0.04	0.004	5.25	77.07
=====				
ID = 1 ( 2001):	1.30	0.022	5.25	74.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0202)	0.71	
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.70	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	68.83	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	3.03 (ii)	4.70 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.27	0.22

\*TOTALS\*

PEAK FLOW (cms)=	0.07	0.00	0.073 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.50
TOTAL RAINFALL (mm)=	80.82	80.82	80.82



RUNOFF COEFFICIENT = 0.99 0.59 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.

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| CALIB |
| STANDHYD ( 0209) | Area (ha)= 0.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.12
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	36.70	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81



1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.08 (ii) 13.75 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.017 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 60.48  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.75

\*\*\*\*\* 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.

-----

ADD HYD ( 2019)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0202):	0.71	0.073	5.25	79.50
+ ID2= 2 ( 0209):	0.20	0.017	5.25	60.48
=====				
ID = 3 ( 2019):	0.91	0.090	5.25	75.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR( 2020) | 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 | 0.0090          | 0.0600
    
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                AREA      QPEAK      TPEAK      R.V.
                (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 2019) 0.913      0.090      5.25      75.29
OUTFLOW: ID= 1 ( 2020) 0.913      0.008      7.75      73.43
    
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PEAK FLOW REDUCTION [Qout/Qin](%)= 9.02
TIME SHIFT OF PEAK FLOW (min)=150.00
MAXIMUM STORAGE USED (ha.m.)= 0.0543
    
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| CALIB           |
| STANDHYD ( 2021) | Area (ha)= 0.04
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.04      0.00
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 16.49      40.00
Mannings n = 0.013      0.250
    
```

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

----- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81



1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.73  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.29 (ii) 2.96 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.33 0.28

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
 TIME TO PEAK (hrs)= 4.58 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 77.07  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 0.95

\*\*\*\*\* 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.

-----  
 | CALIB |  
 | STANDHYD ( 2022) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00  
 -----

IMPERVIOUS PERVIOUS (i)



Surface Area	(ha)=	0.08	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.67	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		



Max.Eff.Inten.(mm/hr)=	37.17	28.73	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.64 (ii)	6.54 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.14	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	75.62
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.94

\*\*\*\*\* 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.

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-----
| ADD HYD ( 20201) |
| 1 + 2 = 3       |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 2020):	0.91	0.008	7.75	73.43
+ ID2= 2 ( 2021):	0.04	0.004	5.25	77.07
=====				
ID = 3 ( 20201):	0.95	0.011	5.25	73.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 20201) |
| 3 + 2 = 1       |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 20201):	0.95	0.011	5.25	73.59
+ ID2= 2 ( 2022):	0.09	0.009	5.25	75.62
=====				
ID = 1 ( 20201):	1.04	0.020	5.25	73.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0002) |
| 1 + 2 = 3       |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
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ID1= 1 ( 2001):	1.30	0.022	5.25	74.23
+ ID2= 2 ( 20201):	1.04	0.020	5.25	73.76
=====				
ID = 3 ( 0002):	2.34	0.042	5.25	74.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 2071)	Area (ha)=	0.09	
ID= 1 DT= 5.0 min	Total Imp(%)=	72.00	Dir. Conn.(%)= 72.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	23.80	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81



2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.60 (ii) 13.28 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 4.83 5.25 5.25  
RUNOFF VOLUME (mm)= 79.82 47.65 70.76  
TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
RUNOFF COEFFICIENT = 0.99 0.59 0.88

\*\*\*\*\* 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.

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-----  
| CALIB |  
| STANDHYD ( 0207) | Area (ha)= 0.31  
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.31	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	45.46	40.00
Mannings n =	0.013	0.250

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

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



TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	2.37 (ii)	4.03 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.30	0.24

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.00	0.032 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82



RUNOFF COEFFICIENT = 0.99 0.59 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.

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| CALIB |
| STANDHYD ( 0215) | Area (ha)= 0.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.12	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	36.61	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81



1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.43  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.08 (ii) 13.75 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.018 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 66.27  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 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.

-----				
ADD HYD ( 2069)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0207):	0.31	0.032	5.25	79.49
+ ID2= 2 ( 0215):	0.20	0.018	5.25	66.27
=====				
ID = 3 ( 2069):	0.51	0.050	5.25	74.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



```

-----
| RESERVOIR( 2070) | 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 | 0.0060          | 0.0325
    
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```

                AREA      QPEAK      TPEAK      R.V.
                (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 2069) 0.511      0.050      5.25      74.29
OUTFLOW: ID= 1 ( 2070) 0.511      0.005      7.33      71.60
    
```

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PEAK FLOW REDUCTION [Qout/Qin](%)= 10.71
TIME SHIFT OF PEAK FLOW (min)=125.00
MAXIMUM STORAGE USED (ha.m.)= 0.0291
    
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-----
| CALIB           |
| STANDHYD ( 2072) | Area (ha)= 0.04
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00
-----
    
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.03      0.01
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 15.62      40.00
Mannings n = 0.013      0.250
    
```

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

----- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81



1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.25 (ii)	12.92 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	67.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.84

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 20701) |  
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2070):	0.51	0.005	7.33	71.60



+ ID2= 2 ( 2071):	0.09	0.008	5.25	70.76
=====				
ID = 3 ( 20701):	0.60	0.012	5.25	71.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 20701)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20701):	0.60	0.012	5.25	71.48
+ ID2= 2 ( 2072):	0.04	0.003	5.25	67.49
=====				
ID = 1 ( 20701):	0.63	0.016	5.25	71.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0204)				
ID= 1 DT= 5.0 min	Area (ha)=	0.17	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	33.57	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81		
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81		
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81		
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81		
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81		
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81		
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81		
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81		
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81		
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81		
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81		
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81		
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81		
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81		





1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	1.97 (ii)	3.64 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.25

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.017 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	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.

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CALIB				
STANDHYD ( 0210)		Area (ha)=	0.13	
ID= 1 DT= 5.0 min		Total Imp(%)=	73.00	Dir. Conn.(%)= 73.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.04
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.55	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		



Max.Eff.Inten.(mm/hr)=	37.17	28.43	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.83 (ii)	13.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	71.08
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.88

\*\*\*\*\* 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.

CALIB			
STANDHYD ( 0205)	Area (ha)=	0.24	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.23	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	39.75	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81



0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 37.17 28.73  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.18 (ii) 3.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.25

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.024 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 79.82 47.65 79.49  
 TOTAL RAINFALL (mm)= 80.82 80.82 80.82  
 RUNOFF COEFFICIENT = 0.99 0.59 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.



CALIB			
STANDHYD ( 0206)	Area (ha)=	0.50	
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	57.62	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81



2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	2.73 (ii)	4.40 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.29	0.23

\*TOTALS\*

PEAK FLOW (cms)=	0.05	0.00	0.051 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.50
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	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.

CALIB	
STANDHYD ( 0203)	Area (ha)= 0.15
ID= 1 DT= 5.0 min	Total Imp(%)= 34.00 Dir. Conn.(%)= 34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	31.30	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81



0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.89 (ii)	13.56 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.01	0.012 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	58.52
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.72

\*\*\*\*\* 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.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0203):	0.15	0.012	5.25	58.52
+ ID2= 2 ( 0204):	0.17	0.017	5.25	79.49
=====				
ID = 3 ( 2060):	0.32	0.030	5.25	69.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2060):	0.32	0.030	5.25	69.74
+ ID2= 2 ( 0205):	0.24	0.024	5.25	79.49
=====				
ID = 1 ( 2060):	0.55	0.054	5.25	73.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2060):	0.55	0.054	5.25	73.92
+ ID2= 2 ( 0206):	0.50	0.051	5.25	79.50
=====				
ID = 3 ( 2060):	1.05	0.105	5.25	76.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2060):	1.05	0.105	5.25	76.56
+ ID2= 2 ( 0210):	0.13	0.012	5.25	71.08
=====				
ID = 1 ( 2060):	1.18	0.118	5.25	75.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.





-----  
 -----  
 | RESERVOIR( 20601) | OVERFLOW IS OFF  
 | IN= 2---> OUT= 1 |  
DT= 5.0 min
OUTFLOW STORAGE
(cms) (ha.m.)
0.0000 0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2060)	1.182	0.118	5.25	75.95
OUTFLOW: ID= 1 ( 20601)	1.182	0.011	7.50	74.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.19  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0708

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 -----  
 | CALIB |  
 | STANDHYD ( 2061) | Area (ha)= 0.06  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	20.00	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	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81



1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.45 (ii)	13.12 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	69.79
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.86

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 20602) |  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)



ID1= 1 ( 20601):	1.18	0.011	7.50	74.55
+ ID2= 2 ( 2061):	0.06	0.006	5.25	69.79
=====				
ID = 3 ( 20602):	1.24	0.014	5.25	74.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0002):	2.34	0.042	5.25	74.02
+ ID2= 2 ( 20602):	1.24	0.014	5.25	74.32
=====				
ID = 3 ( 0003):	3.58	0.056	5.25	74.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0003):	3.58	0.056	5.25	74.12
+ ID2= 2 ( 20701):	0.63	0.016	5.25	71.25
=====				
ID = 1 ( 0003):	4.22	0.072	5.25	73.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 2201)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.16		
Total Imp(%)	=	99.00	Dir. Conn.(%)	= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.16	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN		TIME	RAIN		TIME	RAIN
hrs	mm/hr		hrs	mm/hr		hrs	mm/hr
0.083	0.00		3.167	4.85		6.250	10.50
						9.33	0.81



0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	1.94 (ii)	3.61 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.25

			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.016 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.98

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



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 $CN^* = 85.0$      $I_a = \text{Dep. Storage (Above)}$
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0006)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0003):	4.22	0.072	5.25	73.69
+ ID2= 2 ( 2201):	0.16	0.016	5.25	79.49
=====				
ID = 3 ( 0006):	4.38	0.089	5.25	73.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0208)	0.05	
ID= 1 DT= 5.0 min	Total Imp(%)= 34.00	34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.83	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81



1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.35 (ii)	13.02 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	56.80
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.70

\*\*\*\*\* 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.

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-----  
| CALIB |  
| STANDHYD ( 0211) | Area (ha)= 0.10



| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	25.36	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81



3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=		37.17		28.73			
over (min)		5.00		5.00			
Storage Coeff. (min)=		1.67 (ii)		3.33 (ii)			
Unit Hyd. Tpeak (min)=		5.00		5.00			
Unit Hyd. peak (cms)=		0.32		0.26			
						*TOTALS*	
PEAK FLOW (cms)=		0.01		0.00		0.010 (iii)	
TIME TO PEAK (hrs)=		4.83		5.25		5.25	
RUNOFF VOLUME (mm)=		79.82		47.65		79.49	
TOTAL RAINFALL (mm)=		80.82		80.82		80.82	
RUNOFF COEFFICIENT =		0.99		0.59		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.

CALIB	Area (ha)=	0.62		
STANDHYD ( 0213)	Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.61	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	64.34	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	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81





0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73
over (min)	5.00	5.00
Storage Coeff. (min)=	2.91 (ii)	4.58 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.28	0.23

			*TOTALS*
PEAK FLOW (cms)=	0.06	0.00	0.064 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	79.50
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	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.



CALIB			
STANDHYD ( 0212)	Area (ha)=	0.19	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.40	Dir. Conn.(%)= 90.40

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	35.63	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81



2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.73	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.04 (ii)	6.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.31	0.15	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	76.72
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.95

\*\*\*\*\* 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.

-----

ADD HYD ( 2130)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0208):	0.05	0.004	5.25	56.80
+ ID2= 2 ( 0211):	0.10	0.010	5.25	79.49
=====				
ID = 3 ( 2130):	0.14	0.014	5.25	71.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 2130)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2130):	0.14	0.014	5.25	71.99
+ ID2= 2 ( 0212):	0.19	0.019	5.25	76.72
=====				
ID = 1 ( 2130):	0.33	0.033	5.25	74.68



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 2130):	0.33	0.033	5.25	74.68
+ ID2= 2 ( 0213):	0.62	0.064	5.25	79.50
=====				
ID = 3 ( 2130):	0.96	0.097	5.25	77.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 21301)	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	0.0160	0.0590
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2130)	0.956	0.097	5.25	77.81
OUTFLOW: ID= 1 ( 21301)	0.956	0.014	7.25	76.83

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.80  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0530

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 2131)	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)= 67.30	Dir. Conn.(%)= 67.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81



0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.87 (ii)	13.54 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	47.65	69.23
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.59	0.86

\*\*\*\*\* 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.

ADD HYD ( 21302)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 21301):	0.96	0.014	7.25	76.83
+ ID2= 2 ( 2131):	0.14	0.013	5.25	69.23
=====				
ID = 3 ( 21302):	1.10	0.026	5.25	75.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0005)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0006):	4.38	0.089	5.25	73.91
+ ID2= 2 ( 21302):	1.10	0.026	5.25	75.85
=====				
ID = 3 ( 0005):	5.47	0.114	5.25	74.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0005)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0005):	5.47	0.114	5.25	74.30
+ ID2= 2 ( 2141):	1.03	0.078	5.25	47.56
=====				
ID = 1 ( 0005):	6.50	0.192	5.25	70.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0091)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0005):	6.50	0.192	5.25	70.06



```
+ ID2= 2 ( 0092):    0.17  0.014  5.25  58.00
=====
ID = 3 ( 0091):    6.67  0.206  5.25  69.76
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
VV   I  SSSSS  UUUUU  A  A  LLLLL
```

```
000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000
```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\4f627d46-bf85-4b03-a777-c20ce0e

Summary filename:

C:\Users\PTTrinidad-Rhodium\AppData\Local\Civica\XH5\becad37f-97fe-4a15-a3fd-f87dd2156d5f\4f627d46-bf85-4b03-a777-c20ce0e

DATE: 10-25-2023

TIME: 12:20:11

USER:

COMMENTS: \_\_\_\_\_

```
*****
** SIMULATION : Run 6          **
```



\*\*\*\*\*

-----  
READ STORM
Ptotal= 88.54 mm
-----

Filename: C:\Users\PTTrinidad-Rhodus\AppData  
 Local\Temp\  
 040575ce-0e4a-400f-8d35-0395d2b4194d\e14a946a  
 Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.25	15.05	6.50	6.20	9.75	0.89
0.25	0.89	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	3.54	10.50	0.89
1.00	0.89	4.25	40.71	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	1.77	11.50	0.89
2.00	0.89	5.25	11.51	8.50	1.77	11.75	0.89
2.25	5.31	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77		
2.75	5.31	6.00	11.51	9.25	0.89		
3.00	5.31	6.25	6.20	9.50	0.89		

-----  
 | CALIB |  
 | NASHYD ( 0082) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.04 Curve Number (CN)= 85.0  
 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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89





1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.007

PEAK FLOW (cms)= 0.003 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 54.246  
 TOTAL RAINFALL (mm)= 88.540  
 RUNOFF COEFFICIENT = 0.613

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

-----			
CALIB			
NASHYD ( 0086)			
ID= 1 DT= 5.0 min			
-----			
Area	(ha)=	0.01	Curve Number (CN)= 85.0
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	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr		hrs	mm/hr	hrs	mm/hr



0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.002

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 54.172

TOTAL RAINFALL (mm)= 88.540

RUNOFF COEFFICIENT = 0.612

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



CALIB			
STANDHYD ( 0199)	Area (ha)=	0.09	
ID= 1 DT= 5.0 min	Total Imp(%)=	61.80	Dir. Conn.(%)= 61.80

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.18	40.00
Mannings n =	0.013	0.250

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

---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89



2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.56 (ii) 12.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.009 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 74.79  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 0.84

\*\*\*\*\* 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.

CALIB			
NASHYD ( 1003)	Area (ha)= 0.03	Curve Number (CN)= 85.0	
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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89



1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.006

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 5.250  
 RUNOFF VOLUME (mm)= 54.239  
 TOTAL RAINFALL (mm)= 88.540  
 RUNOFF COEFFICIENT = 0.613

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

-----				
ADD HYD ( 0092)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 1003):	0.03	0.002	5.25	54.24
+ ID2= 2 ( 0199):	0.09	0.009	5.25	74.79
=====				
ID = 3 ( 0092):	0.12	0.011	5.25	69.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ADD HYD ( 0092)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0092):	0.12	0.011	5.25	69.68
+ ID2= 2 ( 0082):	0.04	0.003	5.25	54.25
=====				
ID = 1 ( 0092):	0.15	0.015	5.25	65.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0092)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0092):	0.15	0.015	5.25	65.96
+ ID2= 2 ( 0086):	0.01	0.001	5.25	54.17
=====				
ID = 3 ( 0092):	0.17	0.016	5.25	65.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 2141)				
ID= 1 DT= 5.0 min				
Area	(ha)=	1.03	Curve Number	(CN)= 85.0
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	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89



1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.197

PEAK FLOW (cms)= 0.088 (i)

TIME TO PEAK (hrs)= 5.250

RUNOFF VOLUME (mm)= 54.264

TOTAL RAINFALL (mm)= 88.540

RUNOFF COEFFICIENT = 0.613

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

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 -----  
 | CALIB |  
 | STANDHYD ( 0201) | Area (ha)= 0.73  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.72	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	69.71	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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.40
over (min)	5.00	5.00
Storage Coeff. (min)=	2.95 (ii)	4.56 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.28	0.23

\*TOTALS\*

PEAK FLOW (cms)=	0.08	0.00	0.082 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.21
TOTAL RAINFALL (mm)=	88.54	88.54	88.54





RUNOFF COEFFICIENT = 0.99 0.61 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.

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| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.44
| ID= 1 DT= 5.0 min | Total Imp(%)= 67.40 Dir. Conn.(%)= 67.40
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.30	0.14
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	54.22	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89



1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.53 (ii) 13.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.046 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 76.71  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 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.

-----

ADD HYD ( 2000)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.44	0.046	5.25	76.71
+ ID2= 2 ( 0201):	0.73	0.082	5.25	87.21
=====				
ID = 3 ( 2000):	1.17	0.128	5.25	83.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----



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-----
| RESERVOIR( 20011) | 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 | 0.0140           | 0.0755
    
```

```

                AREA      QPEAK      TPEAK      R.V.
                (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 2000) 1.170      0.128      5.25      83.25
OUTFLOW: ID= 1 ( 20011) 1.170      0.014      7.33      82.08
    
```

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PEAK FLOW REDUCTION [Qout/Qin](%)= 10.82
TIME SHIFT OF PEAK FLOW (min)=125.00
MAXIMUM STORAGE USED (ha.m.)= 0.0746
    
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| CALIB           |
| STANDHYD ( 2011) | Area (ha)= 0.09
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 69.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.06      0.03
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 24.67      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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89



1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	1.58 (ii)	12.70 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	77.19
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

CALIB	
STANDHYD ( 2012)	Area (ha)= 0.04
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00   Dir. Conn.(%)= 99.00

IMPERVIOUS      PERVIOUS (i)



Surface Area	(ha)=	0.03	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	15.28	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		



Max.Eff.Inten.(mm/hr)=	40.71	32.40	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.19 (ii)	2.79 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.28	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	84.54
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.95

\*\*\*\*\* 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.

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-----
| ADD HYD ( 2001) |
| 1 + 2 = 3      |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 2001):	1.17	0.014	7.33	82.08
+ ID2= 2 ( 2011):	0.09	0.009	5.25	77.19
=====				
ID = 3 ( 2001):	1.26	0.021	5.25	81.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2001) |
| 3 + 2 = 1      |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 2001):	1.26	0.021	5.25	81.73
+ ID2= 2 ( 2012):	0.04	0.004	5.25	84.54
=====				
ID = 1 ( 2001):	1.30	0.025	5.25	81.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB          |
| STANDHYD ( 0202) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.71		
Total Imp(%)=	99.00	Dir. Conn.(%)=	99.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	68.83	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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		



Max.Eff.Inten.(mm/hr)=	40.71	32.40	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.93 (ii)	4.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.28	0.23	
			*TOTALS*
PEAK FLOW (cms)=	0.08	0.00	0.080 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.21
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

CALIB	
STANDHYD ( 0209)	Area (ha)= 0.20
ID= 1 DT= 5.0 min	Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.12
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	36.70	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89





0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	2.01 (ii)	13.12 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.01	0.019 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	67.59
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.76

\*\*\*\*\* 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.



ADD HYD ( 2019)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0202):	0.71	0.080	5.25	87.21
+ ID2= 2 ( 0209):	0.20	0.019	5.25	67.59
=====				
ID = 3 ( 2019):	0.91	0.099	5.25	82.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2020)	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	0.0090	0.0600

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2019)	0.913	0.099	5.25	82.86
OUTFLOW: ID= 1 ( 2020)	0.913	0.009	7.67	81.01

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.02  
 TIME SHIFT OF PEAK FLOW (min)=145.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0598

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 2021)	0.04	
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.00
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	16.49	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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89



0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.40  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.24 (ii) 2.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.33 0.28

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
 TIME TO PEAK (hrs)= 4.58 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 87.21  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 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.

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 -----  
 | CALIB |  
 | STANDHYD ( 2022) | Area (ha)= 0.09  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00  
 -----  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	24.67	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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89



2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.40
over (min)	5.00	10.00
Storage Coeff. (min)=	1.58 (ii)	6.31 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.33	0.15

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.010 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	83.21
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.94

\*\*\*\*\* 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.

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-----
| ADD HYD ( 20201) |
| 1 + 2 = 3 |
-----

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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2020):	0.91	0.009	7.67	81.01
+ ID2= 2 ( 2021):	0.04	0.005	5.25	87.21
=====				
ID = 3 ( 20201):	0.95	0.012	5.25	81.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 20201) |
| 3 + 2 = 1 |
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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 20201):	0.95	0.012	5.25	81.28



+ ID2= 2 ( 2022):	0.09	0.010	5.25	83.21
=====				
ID = 1 ( 20201):	1.04	0.022	5.25	81.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0002)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2001):	1.30	0.025	5.25	81.80
+ ID2= 2 ( 20201):	1.04	0.022	5.25	81.45
=====				
ID = 3 ( 0002):	2.34	0.046	5.25	81.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 2071)	Area (ha)=	0.09	
ID= 1 DT= 5.0 min	Total Imp(%)=	72.00	Dir. Conn.(%)= 72.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.06	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	23.80	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89



1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	1.55 (ii)	12.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	78.19
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	0.88

\*\*\*\*\* 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.

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CALIB				
STANDHYD ( 0207)		Area (ha)=	0.31	
ID= 1 DT= 5.0 min		Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.31	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	45.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		





Max.Eff.Inten.(mm/hr)=	40.71	32.40	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.28 (ii)	3.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.25	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.00	0.035 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

CALIB			
STANDHYD ( 0215)	Area (ha)=	0.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	58.00	Dir. Conn.(%)= 58.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.12	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	36.61	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89



0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	2.00 (ii)	13.12 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.01	0.020 (iii)
TIME TO PEAK (hrs)=	4.83	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	73.56
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.



ADD HYD ( 2069)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0207):	0.31	0.035	5.25	87.20
+ ID2= 2 ( 0215):	0.20	0.020	5.25	73.56
=====				
ID = 3 ( 2069):	0.51	0.055	5.25	81.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 2070)	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	0.0060	0.0325

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2069)	0.511	0.055	5.25	81.84
OUTFLOW: ID= 1 ( 2070)	0.511	0.006	7.33	79.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.71  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0320

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 2072)	0.04	
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	15.62	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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89



0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.20 (ii) 12.32 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
 TIME TO PEAK (hrs)= 4.58 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 74.74  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 0.84

\*\*\*\*\* 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.

ADD HYD ( 20701)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 2070):	0.51	0.006	7.33	79.15
+ ID2= 2 ( 2071):	0.09	0.009	5.25	78.19
=====				
ID = 3 ( 20701):	0.60	0.014	5.25	79.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 20701)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 20701):	0.60	0.014	5.25	79.01
+ ID2= 2 ( 2072):	0.04	0.004	5.25	74.74
=====				
ID = 1 ( 20701):	0.63	0.017	5.25	78.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		STANDHYD ( 0204)	
ID= 1 DT= 5.0 min	Area (ha)=	0.17	
	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.17	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	33.57	40.00
Mannings n	=	0.013	0.250

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

---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89



0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max. Eff. Inten. (mm/hr)=	40.71	32.40
over (min)	5.00	5.00
Storage Coeff. (min)=	1.90 (ii)	3.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.32	0.26

			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

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CALIB			
STANDHYD ( 0210)	Area (ha)=	0.13	
ID= 1 DT= 5.0 min	Total Imp(%)=	73.00	Dir. Conn.(%)= 73.00

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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.10	0.04
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.55	40.00
Mannings n =	0.013	0.250

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

----- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89



2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.76 (ii) 12.88 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.014 (iii)  
 TIME TO PEAK (hrs)= 5.08 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 78.52  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 0.89

\*\*\*\*\* 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.

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 | CALIB |  
 | STANDHYD ( 0205) | Area (ha)= 0.24  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.23	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	39.75	40.00
Mannings n	=	0.013	0.250

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

----- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.40
over (min)	5.00	5.00
Storage Coeff. (min)=	2.10 (ii)	3.71 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.25

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.00	0.027 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

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| CALIB                               |
| STANDHYD ( 0206)                   | Area   (ha)=   0.50
| ID= 1 DT= 5.0 min                   | Total Imp(%)= 99.00   Dir. Conn.(%)= 99.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.49	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	57.62	40.00
Mannings n	=	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89



1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.40
over (min)	5.00	5.00
Storage Coeff. (min)=	2.63 (ii)	4.24 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.29	0.24

			*TOTALS*
PEAK FLOW (cms)=	0.06	0.00	0.056 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.21
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

CALIB	
STANDHYD ( 0203)	Area (ha)= 0.15
ID= 1 DT= 5.0 min	Total Imp(%)= 34.00 Dir. Conn.(%)= 34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	31.30	40.00
Mannings n =	0.013	0.250

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



---- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.10  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.82 (ii) 12.94 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.01 0.01 \*TOTALS\* 0.014 (iii)



TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	65.60
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0203):	0.15	0.014	5.25	65.60
+ ID2= 2 ( 0204):	0.17	0.019	5.25	87.20
=====				
ID = 3 ( 2060):	0.32	0.033	5.25	77.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 2060):	0.32	0.033	5.25	77.15
+ ID2= 2 ( 0205):	0.24	0.027	5.25	87.20
=====				
ID = 1 ( 2060):	0.55	0.060	5.25	81.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 2060)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 2060):	0.55	0.060	5.25	81.46
+ ID2= 2 ( 0206):	0.50	0.056	5.25	87.21
=====				
ID = 3 ( 2060):	1.05	0.116	5.25	84.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ADD HYD ( 2060)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 2060):	1.05	0.116	5.25	84.18
+ ID2= 2 ( 0210):	0.13	0.014	5.25	78.52
=====				
ID = 1 ( 2060):	1.18	0.130	5.25	83.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 20601)	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	0.0120	0.0785

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 2060)	1.182	0.130	5.25	83.56
OUTFLOW: ID= 1 ( 20601)	1.182	0.012	7.50	82.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.20  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0779

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 2061)	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	20.00	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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89



0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	1.39 (ii)	12.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	77.19
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

ADD HYD ( 20602)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 20601):	1.18	0.012	7.50	82.15
+ ID2= 2 ( 2061):	0.06	0.006	5.25	77.19
=====				
ID = 3 ( 20602):	1.24	0.016	5.25	81.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0002):	2.34	0.046	5.25	81.64
+ ID2= 2 ( 20602):	1.24	0.016	5.25	81.91
=====				
ID = 3 ( 0003):	3.58	0.062	5.25	81.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0003)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0003):	3.58	0.062	5.25	81.74
+ ID2= 2 ( 20701):	0.63	0.017	5.25	78.76
=====				
ID = 1 ( 0003):	4.22	0.080	5.25	81.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.16
STANDHYD ( 2201)	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.16	0.00
Dep. Storage (mm)=	1.00	5.00





Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max. Eff. Inten. (mm/hr)=	40.71	32.40
over (min)	5.00	5.00



Storage Coeff. (min)=	1.87 (ii)	3.48 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.32	0.26	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.018 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

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-----
| ADD HYD ( 0006) |
| 1 + 2 = 3 |
-----

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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0003):	4.22	0.080	5.25	81.29
+ ID2= 2 ( 2201):	0.16	0.018	5.25	87.20
=====				
ID = 3 ( 0006):	4.38	0.098	5.25	81.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0208) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.05		
Total Imp(%)=	34.00	Dir. Conn.(%)=	34.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.83	40.00
Mannings n =	0.013	0.250

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89



0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.10
over (min)	5.00	15.00
Storage Coeff. (min)=	1.30 (ii)	12.42 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	4.58	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	65.51
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

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 -----  
 | CALIB |  
 | STANDHYD ( 0211) | Area (ha)= 0.10  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
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 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.10	0.00
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	25.36	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	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89



2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.40  
over (min) 5.00 5.00  
Storage Coeff. (min)= 1.61 (ii) 3.22 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.32 0.27

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 5.08 5.25 5.25  
RUNOFF VOLUME (mm)= 87.54 54.37 87.20  
TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
RUNOFF COEFFICIENT = 0.99 0.61 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.

-----  
-----  
| CALIB |  
| STANDHYD ( 0213) | Area (ha)= 0.62  
| ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00  
-----  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.61	0.01
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	64.34	40.00
Mannings n =	0.013	0.250

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



## ----- 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	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max. Eff. Inten. (mm/hr)=	40.71	32.40
over (min)	5.00	5.00
Storage Coeff. (min)=	2.81 (ii)	4.42 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.28	0.23

## \*TOTALS\*

PEAK FLOW (cms)=	0.07	0.00	0.070 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	87.21



TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

CALIB	Area (ha)=	0.19		
STANDHYD ( 0212)	Total Imp(%)=	90.40	Dir. Conn.(%)=	90.40
ID= 1 DT= 5.0 min				

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.17	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	35.63	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89



1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 40.71 32.40  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.97 (ii) 6.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.15

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.021 (iii)  
 TIME TO PEAK (hrs)= 4.83 5.25 5.25  
 RUNOFF VOLUME (mm)= 87.54 54.37 84.34  
 TOTAL RAINFALL (mm)= 88.54 88.54 88.54  
 RUNOFF COEFFICIENT = 0.99 0.61 0.95

\*\*\*\*\* 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.

-----  
 | ADD HYD ( 2130) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0208):	0.05	0.004	5.25	65.51
+ ID2= 2 ( 0211):	0.10	0.011	5.25	87.20
=====				
ID = 3 ( 2130):	0.14	0.015	5.25	80.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.





```

-----
| ADD HYD ( 2130) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 2130):  0.14  0.015  5.25  80.03
+ ID2= 2 ( 0212):  0.19  0.021  5.25  84.34
=====
ID = 1 ( 2130):  0.33  0.036  5.25  82.48

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2130) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 2130):  0.33  0.036  5.25  82.48
+ ID2= 2 ( 0213):  0.62  0.070  5.25  87.21
=====
ID = 3 ( 2130):  0.96  0.107  5.25  85.55

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 21301) | 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      0.0160      0.0590

```

```

          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 2130)  0.956  0.107  5.25  85.55
OUTFLOW: ID= 1 ( 21301)  0.956  0.016  7.25  84.57

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.81
TIME SHIFT OF PEAK FLOW (min)=120.00
MAXIMUM STORAGE USED (ha.m.)= 0.0582

```

```

-----
| CALIB |
| STANDHYD ( 2131) |
| ID= 1 DT= 5.0 min |
-----
          Area (ha)= 0.14
          Total Imp(%)= 67.30  Dir. Conn.(%)= 67.30

```

```

          IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.09  0.05
Dep. Storage (mm)= 1.00  5.00

```



Average Slope (%)=	1.00	2.00
Length (m)=	30.66	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max. Eff. Inten. (mm/hr)=	40.71	32.10
over (min)	5.00	15.00



Storage Coeff. (min)=	1.80 (ii)	12.92 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.015 (iii)
TIME TO PEAK (hrs)=	5.08	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	54.37	76.64
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.61	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.

```

-----
| ADD HYD ( 21302) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 21301):	0.96	0.016	7.25	84.57
+ ID2= 2 ( 2131):	0.14	0.015	5.25	76.64
=====				
ID = 3 ( 21302):	1.10	0.028	5.25	83.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0005) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0006):	4.38	0.098	5.25	81.51
+ ID2= 2 ( 21302):	1.10	0.028	5.25	83.56
=====				
ID = 3 ( 0005):	5.47	0.126	5.25	81.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0005) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0005):	5.47	0.126	5.25	81.92
+ ID2= 2 ( 2141):	1.03	0.088	5.25	54.26



```
=====
ID = 1 ( 0005):      6.50   0.214   5.25   77.54
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

```
-----
| ADD HYD ( 0091) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0005):      6.50   0.214   5.25   77.54
+ ID2= 2 ( 0092):      0.17   0.016   5.25   65.04
=====
ID = 3 ( 0091):      6.67   0.230   5.25   77.23
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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FINISH

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