FUNCTIONAL SERVICING/ STORMWATER MANAGEMENT REPORT

484 & 490 Plains Road East Residential Development

City of Burlington
City File #: 505-06/17 & 520-14/17

Halton Region
Region File #: 505-06/17 & 520-14/17

Prepared for:

National Homes (Plains Road) LP

Project #: 17-539

February 15, 2019
2nd Submission

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1 INTRODUCTION

Urbantech Consulting has been retained by National Homes (Plains Road) LP, herein referred to as NH, to prepare a Functional Servicing/Stormwater Management Report in support of a zoning by-law amendment application associated with their combined 1.84 Ha. property comprised of #484 & #490 Plains Road East in the City of Burlington, Halton Region.

The current site plan concept proposes development of:

- 2 residential condominium towers 8 storeys in height and containing 276 residential suites;
- 6 residential condominium townhouse stacked back to back blocks 3 storeys in height and containing 110 residential suites;
- Parkland;
- Surface parking (including lay-by parking on Plains Road East) as well as an underground parking garage.

Refer to the current **Site Plan** by Kirkor Architects + Planners for additional details.

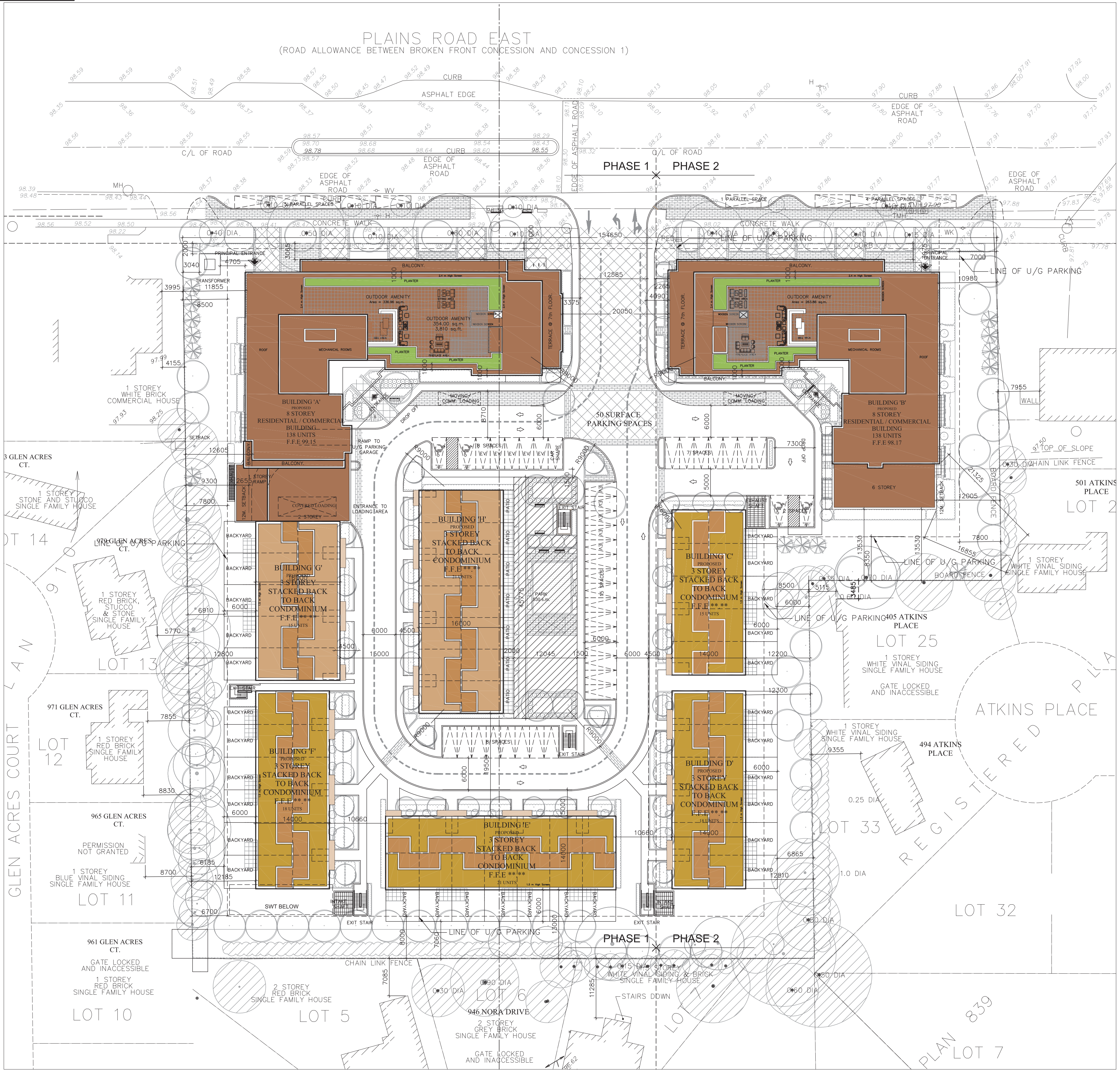
This report provides an assessment of the impact of the current site plan concept on existing infrastructure. The concepts presented in this report are in general conformance with the latest standards and criteria prepared by the City of Burlington (roads, grading and storm drainage) and Halton Region (water distribution and sanitary drainage).

2 BACKGROUND INFORMATION

The NH property is located on the south side of Plains Road East between Falcon Boulevard & Sanford Drive. Fronting Plains Road East, existing commercial developments neighbour the property to the west and east and Maplehurst Public School is located directly across. Existing residential development (off Glen Acres Court, Nora Drive & Atkins Place) abut the flankages and rear of the property.

The property is understood to be outside of Conservation Halton's Regulated Area.

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Site Plan 2 RZ-01
1:300



Context Plan 3 RZ-01
N/A

484 PLAINS ROAD
Burlington, Ontario
Proposed Mixed-Use Development

Project Statistics
February 13, 2019 — Project No. 17-047-55

1.0 Site Area

	acres	sq.m.	sq.ft.
	4.5408	18,376.00	197,798
Total Site Area	4.5408	18,376.00	197,798

2.0 GFA

2.11 Proposed GFA - Building A (8 Storey Condominium)

				No. of Floor	sq.m.	sq.m.	sq.ft.
Level	1		(Commercial)	1 x	545.00	545.00	5,866
Level	1		(Residential)	1 x	845.00	845.00	9,096
Levels	2	to 3		2 x	1,481.00	2,962.00	31,883
Levels	4	to 6		3 x	1,495.00	4,485.00	48,276
Levels	7	to 8		2 x	1,317.00	2,634.00	28,352
Mech Penthouse				1 x	200.00	200.00	2,153
Total Proposed GFA - Building A						11,671.00	125,626

2.12 Proposed GFA - Building B (8 Storey Condominium)

				No. of Floor	sq.m.	sq.m.	sq.ft.
Level	1		(Commercial)	1 x	453.00	453.00	4,876
Level	1		(Residential)	1 x	1,081.00	1,081.00	11,636
Levels	2	to 5		4 x	1,485.00	5,940.00	63,938
Level	6			1 x	1,485.00	1,485.00	15,984
Levels	7	to 8		2 x	1,170.00	2,340.00	25,188
Mech Penthouse				1 x	200.00	200.00	2,153
Total Proposed GFA - Building B						11,499.00	123,774

2.13 Proposed GFA - 8 Storey Condominium

	sq.m.	sq.ft.
Total Proposed GFA - Building A	11,671.00	125,626
Total Proposed GFA - Building B	11,499.00	123,774
Total Proposed GFA - 8 Storey Condominium	23,170.00	249,400

2.13 Proposed GFA - 3 Storey Stacked Back-to-Back Townhouses

	sq.m.	sq.ft.
Building C	1,314.00	14,144
Building D	1,575.00	16,953
Building E	1,831.93	19,719
Building F	1,525.00	16,415
Building G	1,831.93	19,719
Building H	1,446.00	15,565
Total Proposed GFA - 3 Storey Stacked Back-to-Back Townhouses	9,523.86	102,514

2.31 Proposed GFA - Underground Parking Garage

	sq.m.	sq.ft.
Parking Level	1,000.00	10,764
Total Proposed GFA - Underground Parking Garage	1,000.00	10,764

2.41 Total Proposed GFA

	sq.m.	sq.ft.
Total Proposed GFA - 8 Storey Condominium	23,170.00	249,400
3 Storey Stacked Back-to-Back Townhouses	9,523.86	102,514
Total Proposed GFA - Underground Parking Garage	1,000.00	10,764
Total Proposed GFA	33,693.86	362,678

3.0 Proposed FSI

Total Proposed GFA	Total Site Area	FSI
33,693.86	÷ 18,376.00 sq.m.	1.83

4.0 Unit Count

4.1 Units - 8 Storey Condominium

	1 BR	2 BR	No. of Units
Building A	85	53	138
Building B	85	53	138
Total Units - 8 Storey Condominium	170	106	276
Building A unit mix	62%	38%	100%
Building B unit mix	62%	38%	100%
OVERALL Unit Mix	62%	38%	100%

4.2 Units - 3 Storey Stacked Back-to-Back Townhouses

	No. of Units
Building C	15
Building D	18
Building E	21
Building F	18
Building G	15
Building H	21
Total Units - 3 Storey Stacked Back-to-Back Townhouses	108

4.3 Total Unit Count

	No. of Units
Total Units - 8 Storey Condominium	276
Total Units - 3 Storey Stacked Back-to-Back Townhouses	108
Total Unit Count	384

5.0 Amenity

5.1 Required Amenity Area as per current By-Law

Unit Type	Ratio (sq.m.)	No. of Unit	sq.m.	sq.ft.
Condominium - 1 Bedroom	20.00	170	3,400.00	36,597
Condominium - 2 Bedroom	35.00	106	3,710.00	39,934
Condominium - 3 Bedroom	35.00	0	0.00	0
Stacked Back-to-Back Townhouses	25.00	108	2,700.00	29,063
Total Required Amenity Area as per current By-Law		384	9,810.00	105,594

5.2 Proposed Amenity Area

	Ratio (sq.m.)	No. of Unit	sq.m.	sq.ft.
Condominium	20.00	276	5,520.00	59,417
Stacked Back-to-Back Townhouses	20.00	108	2,160.00	23,250
Total Proposed Amenity Area			7,680.00	82,667

5.3 Provided Amenity Area

	sq.m.	sq.ft.
Condominium		
Indoor Amenity	609.00	6,555
Outdoor Amenity @ Roof Top - Building A	337.00	3,627
Outdoor Amenity @ Roof Top - Building B	263.00	2,831
Balconies & Terrace	3,214.00	34,595
Stacked Back-to-Back Townhouses		
Ground Floor Patio and Backyards	1,129.00	12,152
Balconies	195.00	2,099
Roof Terrace	2,106.00	22,669
Total Provided Amenity Area	7,853.00	84,529

6.0 Parking - (minimum space size: 2.75mX5.8m)

6.1 Parking Required (8 Storey Condominium) As per current By-Law

	No. of Units	Parking Ratio	Parking Spaces
Residential - 1 Bedroom	170	1.25 /unit	213
Residential - 2 Bedroom	106	1.50 /unit	159
Residential - 3 Bedroom	0	1.75 /unit	0
Visitors	276	0.35 /unit	97
Total Parking Required (8 Storey Condominium) As per current By-Law			469

6.2 Parking Required (3 Storey Stacked Back-to-Back Townhouses) As per current By-Law

	No. of Units	Parking Ratio	Parking Spaces
Residential	108	1.50 /unit	162
Visitors	108	0.35 /unit	38
Total Parking Required (3 Storey Stacked Back-to-Back Townhouses) As per current By-Law			200

6.3 Parking Required (Commercial) As per current By-Law

	Total Area (sq.m.)	Parking Ratio	Parking Spaces
Commercial	898.00	4Spaces/ 100m² - 5%	38
Total Parking Required (Commercial) As per current By-Law			38

6.4 Total Parking Required

	Parking Spaces
Total Parking Required (8 Storey Condominium) As per current By-Law	469
Total Parking Required (3 Storey Stacked Back-to-Back Townhouses) As per current By-Law	200
Total Parking Required (Commercial) As per current By-Law	38
Total Parking Required	[illegible]

6.5 Parking Proposed

	No. of Units	Parking Ratio	Parking Spaces
Residential - Condominium	276	1.00 /unit	276
Residential - Stacked Back to Bak Townhouses	108	1.00 /unit	108
Visitors and Commercial			96
Total Parking Proposed			[illegible]

6.6 Parking Provided

	P1	Surface	Plains Road	Parking Spaces
Residential - Condominium	288	-	-	288
Residential - Townhouses	114	-	-	114
Commercial and Visitor	46	40	10	96
Total Parking Provided	446	46	[illegible]	[illegible]

Required Accessible Parking Space — *3% of Total Parking Required* — 15

6.7 EV Parking Space Provided

	Parking Spaces
EV Parking at Grade	[illegible]

6.8 CAR SHARE Parking Space Provided

	Parking Spaces
CAR SHARE Parking at Grade	[illegible]

7.0 Building Height

Proposed Building Height

	Storeys
Condominium - Building A	8
Condominium - Building B	8
Townhouses - Building C to J	3

8.0 Coverage

Coverage Area

	Coverage Area (sq.m.)	Total Site Area (sq.m.)	Coverage
Building Coverage Area	7,585.00	18,376.00	41.3%
Landscape Area	7,920.00	18,376.00	43.1%
Paved Area	2,871.00	18,376.00	15.6%
Total Coverage Area			[illegible]

Site Statistics 1 RZ-01

Contractor Must Check And Verify All Dimensions On The Job.

Do Not Scale The Drawings.

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Date:

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No	Revision	Date

DRAFT

CLIENT REVIEW
FEB 13 2019

No.	ISSUED	DATE
2.	RE-ZONING	FEB. 15/2019
1.	RE-ZONING	OCT. 30/2017

Drawing Title:
Context Plan
Site Plan
Site Statistics

Phase 12

Project:
NATIONAL HOMES
Proposed
484 PLAINS ROAD
Residential
Development
CITY OF BURLINGTON
ONTARIO

Scale: AS NOTED
Drawn by: M.M.
Checked by: F.G.
File No.: 17-047
Plot Date: Feb 13, 2019

RZ-01

FILENAME: 17047-484 Plains Road

3 EXISTING CONDITIONS

Since the 1970's, the NH property has been occupied by a commercial development consisting of three large buildings with extensive surface parking. Three (3) separate vehicular access points exist, including a central, signalized intersection with Plains Road East that is proposed to be maintained.

Much of the existing infrastructure within the MG property is not compatible with the current site plan concept and is proposed to be removed.

Drawing REM illustrates the overall existing conditions as well as proposed removals.

WSP has conducted a Geotechnical Investigation of the NH property. The following section summarizes its conclusions and recommendations.

3.1 Soil/Subsurface Conditions

The stratigraphy of the site is generally uniform, comprised of an existing pavement structure overlying loose silty sand fill material. Native soil consists of silty sand underlain by silty clay (till).

Groundwater was recorded at depths of 3.0 – 4.6m, fluctuating seasonally and during storm events. Temporary and/or permanent groundwater control is anticipated.

WSP has recommended the removal/engineering of all existing loose fill material where settlement cannot be tolerated.

4 SANITARY SERVICING

Sanitary servicing is proposed to consist of a single reconstructed connection from the parking garage to the existing manhole (#13534) & 250mm sanitary main located in the south boulevard of Plains Road East and leading west to Falcon Boulevard and onward south ultimately to the Burlington Skyway Wastewater Treatment Plant.

The depth of this existing main is not anticipated to be sufficient to support gravity flows in which case private sanitary pumping will be required from the underground parking level.

Sanitary servicing will be internally distributed within the underground parking level in accordance with detailed mechanical design.

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Based upon the latest standards and criteria prepared by Halton Region, the current site plan concept projects a population of 774 and peak residential flow of 10.10 L/s calculated as follows:

- 1.84 Ha. * 420 equivalent residential persons/Ha. = 774 persons @ 275 L/person/day + peaking factor and infiltration allowances = 10.10 L/s.

(Where 420 equivalent residential persons/Ha. represents the combination of Halton Region standard 6 storey apartment and townhouse flows.

No connection is proposed to the existing 200mm sanitary main located in the north boulevard of Plains Road East.

To assess the impact of the proposed increase in sanitary flow, an approximate sanitary sewer design sheet has been prepared to Falcon Boulevard and enclosed in **Appendix A**. This design sheet also reflects the latest standards and criteria prepared by Halton Region for generating sanitary flows. The design sheet confirms that the existing sanitary outfall has capacity to accept the proposed flow increase for conveyance to Falcon Boulevard. We request the Region review their sanitary sewer system from Falcon Boulevard downstream to confirm same based upon the above projected flows.

The pre-consultation meeting request for Closed Circuit Television (CCTV) condition assessment inspection of the proposed sanitary outfall to Falcon Boulevard is acknowledged and will be addressed at the site plan approval stage.

Drawing SP illustrates the proposed sanitary servicing scheme for the proposed NH development.

5 WATER SERVICING

The NH property is located within the Halton Region zone B1A pressure district. Water servicing is proposed to consist of a 200mm fire & domestic watermain service connection to the existing 150mm water service to #484 Plains Road East.

This existing water service is connected to an existing 300mm local watermain in the north boulevard of Plains Road East with cross-connection to an existing 400mm trunk watermain located in the southernmost driving lane of Plains Road East.

No connection is proposed to the existing 600mm trunk watermain located along the centerline of Plains Road East.

Water servicing will be internally distributed within the underground parking level in accordance with detailed mechanical design.

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Municipal Engineering Solutions (MEP) has completed a preliminary Water Analysis of the NH property enclosed in **Appendix B**.

MEP's analysis indicates that satisfactory operating pressures and fire flows are available to service the proposed development under average day, maximum day, peak hour and maximum day + fire demand scenarios.

MEP's analysis, including existing hydrant flow testing, will be updated at detailed design stage in support of the site plan concept. We request the Region confirm additional requirements (if any) associated with connection to their distribution system.

In accordance with the Region's Multiple Unit Servicing Policy, individual metered water service connections with backflow prevention will be provided to residential customers as dictated by billing requirements. It is currently anticipated that a single condominium corporation is to handle all billing.

It is anticipated that the two towers will include a sprinkler system and fire department connections. Existing hydrant coverage on Plains Road East requires supplemental coverage by multiple private hydrants to satisfy Ontario Building Code criteria for separation from proposed building faces (90m) and fire department connections (45m).

Existing hydrant P5776 fronting NH property conflicts with proposed lay-by parking and will require relocation approximately 20m east of its current location.

Drawing SP illustrates the proposed water distribution scheme for the proposed NH development.

6 STORMWATER MANAGEMENT

6.1 Existing Stormwater Drainage Conditions

Currently, minor system flows are primarily directed to the existing catchbasin manhole & 525mm storm main located within a 10' easement between #945 & #946 Nora Drive, which also received existing rear-yard residential drainage.

This existing storm main leads south on Nora Drive to Townsend Avenue and onward ultimately to a regulated watercourse within the Burlington Golf & Country Club.

Only an approximately 0.16 Ha. portion of minor system flows in the northwest corner of the property is directed to an existing 375mm storm connection to Plains Road East.

Major system flows are directed by surface grading to the 10' easement.

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Both existing minor and major system conveyance appears to be undersized by present day standards.

Table 6-1 approximates existing (pre-development) peak flows to the existing catchbasin manhole & 525 storm main including from the subject property based upon Visual OTTHYMO version 5.0 (VO5) modelling included in **Appendix C**:

Table 6-1 Pre-Development Peak Flows

Storm Event	Nora Drive Outfall & Overland Flow Route Pre-Development Peak Flows (m^3/s)
2-Year	0.331
5-Year	0.432
25-Year	0.583
50-Year	0.644
100-Year	0.706

There are no water quality or water balance measures within the current development.

Drawing STM-1 illustrates existing, pre-development storm servicing and drainage for the NH property.

6.2 City of Burlington Stormwater Design Guidelines

Pre-consultation with City of Burlington staff confirmed applicable design guidelines as follows:

- Quantity Control – Post-development discharge to not exceed pre-development (existing) conditions for all storm events up to and including 100-year;
- Erosion Control – Detain up to the 25mm storm event for 24 – 48 hours;
- Water Balance – Retain up to the 5mm storm event on-site with low-impact development techniques or equivalent;
- Quality Control – Enhanced level (long-term average removal of 80% Total Suspended Solids).

City of Burlington staff have also confirmed no credit is provided for rooftop storage techniques and orifice tubes are preferred to orifice plates.

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6.3 Proposed Stormwater Drainage

6.3.1 Minor & Major System Drainage

Proposed storm drainage consists of a single reconstructed outfall connection from the parking garage to the existing catchbasin manhole & 525mm storm main leading south to Nora Drive.

Primarily, minor & major system drainage is proposed to be captured by catchbasins/area drains and foundation drains conveyed through the underground parking level to the proposed outfall. Non-contaminated and contaminated drainage is to be conveyed in separate sewers (refer to Section 6.3.3 for details). Only the southernmost portion of the proposed development (0.18 Ha.), as well as existing rear-yard residential drainage (0.09 Ha.) is proposed to by-pass the underground parking level and contribute directly to the outfall.

Storm servicing will be internally distributed within the underground parking level in accordance with detailed mechanical design.

No connection is proposed to the existing storm main located in the south boulevard of Plains Road East.

In comparison to existing conditions, the proposed stormwater drainage concept provides the following significant benefits to the City's downstream system:

- Reduction of discharge in all storm events;
- Reduced risk of downstream erosion in all storm events;
- Eliminates surcharging of the existing 525mm storm main;
- Eliminates overland flow conveyance between #945 & #946 Nora Drive;
- Restores some measure of water balance;
- Provides enhanced level quality control.

6.3.2 Quantity Control & Erosion Control

Quantity control during all storm events will be required within the underground parking garage (assumed 'Tank' to be in accordance with detailed mechanical design). The depth of this existing main is not anticipated to be sufficient to support gravity flows in which case private pumping will be required from the underground parking level.

Quantity control requirements are based upon the concept of controlling all storm events to the lesser of the 5-year existing flow or the capacity of the existing outfall. Based on VO5 modelling included in **Appendix C**, it is found that existing 5-year flow to the Nora Drive outfall (0.432 m^3/s) exceeds the full flow capacity of the existing 525mm storm sewer (0.374 m^3/s based on Manning's equation). The overall discharge target for the site is therefore equal to the capacity of the existing 525mm storm main = 0.374 m^3/s, and the target for the pumped 'Tank' discharge is the capacity of the 525mm sewer less the uncontrolled flows by-passing the underground parking level as follows:

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- Q_{target} (525mm STM. @ 0.70%) = 0.374 m^3/s;
- $Q100_{uncontrolled}$ (southernmost portion of proposed development) = 0.062 m^3/s;
- $Q100_{uncontrolled}$ (existing rear-yard drainage) = 0.026 m^3/s;
- $Q_{uncontrolled}$ (estimated temporary and/or permanent dewatering allowance) = 0.015 m^3/s;
- $Q_{max\ controlled}$ (from underground parking level) = Q_{target} - $Q_{uncontrolled}$ = 0.271 m^3/s;
- $Q_{release}$ (from the proposed development during all events) <=0.374 m^3/s.

The modelling of the 'Tank' assumed that the pump can discharge a constant flow at all stages/volumes. The resulting storage requirement to meet the target flow is approximately 247m^3. This storage will be provided within the underground parking level in accordance with detailed mechanical design.

Additionally, the 'Tank' outfall to the existing catchbasin manhole can be equipped with an orifice tube at the discretion of the City of Burlington as an additional control mechanism of last resort. However, in the absence of gravity flow, the need for such a structure is not clear.

Table 6-2 provides a direct comparison of existing (pre-development) vs. proposed post-development peak flows from the subject property:

Table 6-2 Pre- vs. Post-Development Peak Flows

Storm Event	Pre-Development Peak Flows (m^3/s) (ref. Table 6-1)	Post-Development Peak Flows (m^3/s)
2-Year	0.331	0.271 (-18%)
5-Year	0.432	0.271 (-37%)
25-Year	0.583	0.271 (-53%)
50-Year	0.644	0.271 (-58%)
100-Year	0.706	0.271 (-61%)

Notwithstanding to the above noted proposed reduction in peak flows during all storm events and corresponding reduced risk of downstream erosion, the City has requested best efforts to meet erosion control requirements to detain up to the 25mm storm event for 24 – 48 hours. This requirement drives the need for additional 'Tank' storage capacity and could potentially be accommodated subject to detailed parking garage design with consideration for the available footprint in conjunction with other requirements such as mechanical equipment, structural needs and parking requirements.

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With reference to modelling included in **Appendix C**, Table 6-3 quantifies the additional 25mm erosion control storage requirements:

Table 6-3 Erosion Control Storage Requirements

Event	Drawdown Time (hours)	Required Storage Volume (Total/Extended Detention/Active) (m^3)
25mm	24	446/303/143 (+80%)

The City's erosion control criteria drives a significant increase in required storage volume to 446m3 from 247m3 (+80%). While ultimately subject to detailed design, it should be considered unlikely this storage volume could be made available in the underground garage without compromising other considerations such as parking.

We have also quantified other erosion control criteria for information and potential consideration:

Event	Drawdown Time (hours)	Required Storage Volume (Total/Extended Detention/Active) (m^3)
25mm	12	419/255/163 (+70%)
25mm	6	382/181/201 (+39%)
10mm	24	295/160/135 (+8%)
10mm	12	284/151/131 (+4%)
10mm	6	264/130/134 (+/-0%)

6.3.3 Quality Control

Only drainage from proposed surface areas subject to vehicular and/or pedestrian traffic is subject to contamination requiring quality control. Proposed rooftops and rear-yard/landscaped areas are not significant sources of contamination. A dual sewer system is therefore proposed consisting of a 'clean-pipe' collecting drainage from non-contaminated sources and a traditional storm sewer collecting drainage from areas subject to contamination to be routed through quality control as follows:

Suitable enhanced level quality (long-term average removal of 80% Total Suspended Solids) is proposed; this can be accomplished by an oil/grit separator (STC-4000 or approved equivalent).

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6.3.4 External Drainage

Currently, the NH property receives surface drainage from the south boulevard of Plains Road East. It is proposed to re-grade the City's boulevard such that public drainage is entirely directed towards the right-of-way. In addition, a small (0.05 Ha.) landscaped portion of private drainage (surface drainage between buildings A & B and Plains Road East) is also to be directed to the Town's right-of-way as it is not practical to capture this drainage internally.

This proposed drainage area is considerably less than the existing drainage area draining to Plains Road via the existing 375mm storm sewer.

6.3.5 Infiltration Measures & Water Balance

City water balance requirements are to retain the first 5mm storm event on-site with low-impact development techniques or equivalent. While WSP's Geotechnical Investigation suggests that existing soils exhibit infiltration rates suitable for infiltration of storm water runoff and therefore suitable to the implementation of low-impact development (LID) strategies, implementing traditional LID strategies within the NH property is compromised by the large underground garage footprint. Insufficient offset is available from the garage to avoid the influence of foundation drains.

Instead of traditional LID, dead storage/sump below quantity control storage is proposed within the 'Tank' with capacity to retain 5mm of runoff from the NH property (1.84 Ha.) = 92m^3. Subject to detailed design, the following techniques could potentially be implemented to utilize this dead storage volume:

- Irrigation (infiltration/evapotranspiration);
- Grey water building consumption and/or washing stations.

The above measures are estimated to have sufficient demand to provide a 72 hour drawdown (subject to detailed mechanical design).

This sump will remove similar contaminants to an oil/grit separator, with an additional TSS removal efficiency of approximately 10%.

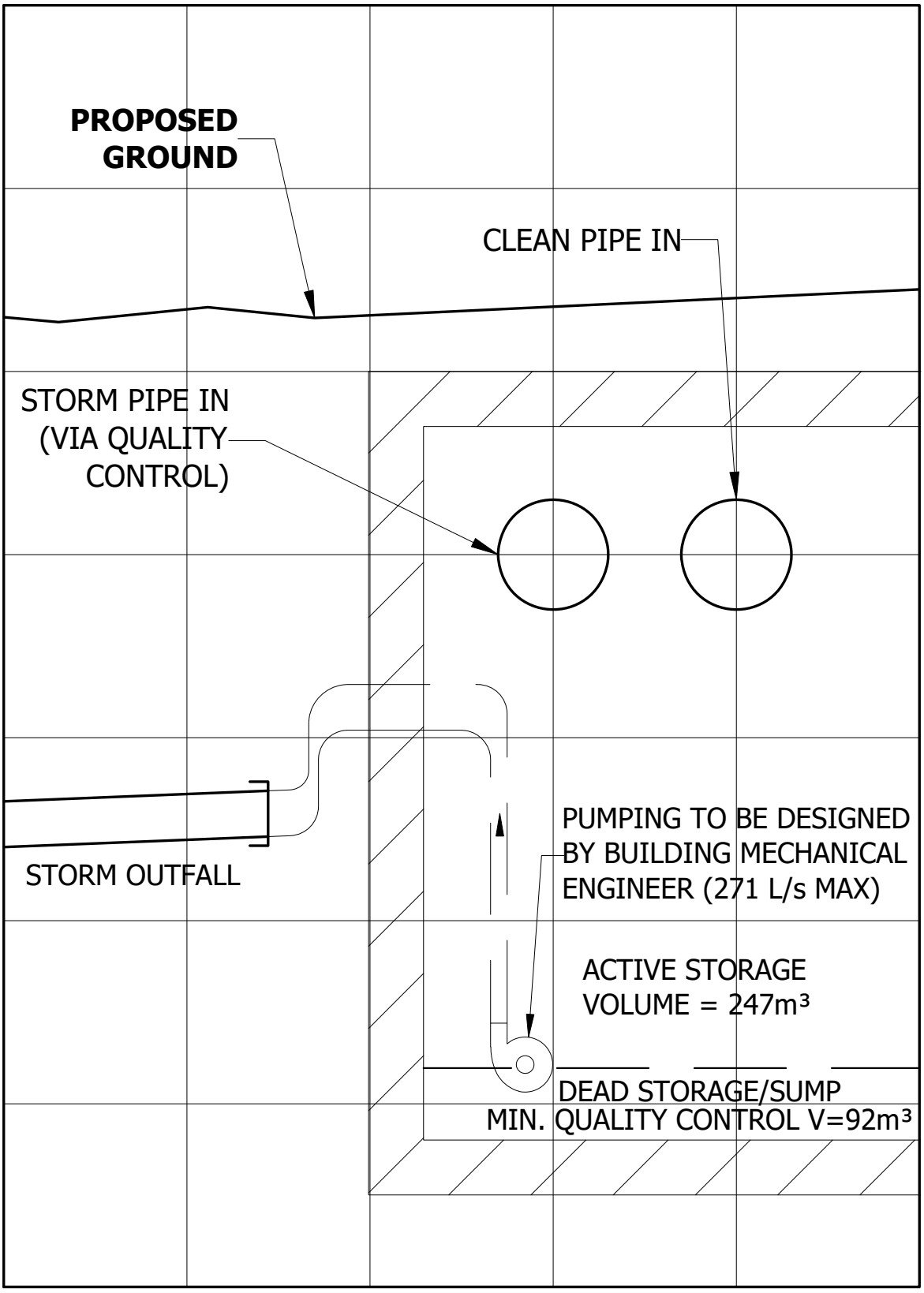
If necessary, the following LID techniques could potentially be implemented within perimeter landscaping:

- Rain barrels for irrigation re-use;
- Increased topsoil depth – To increase the infiltration capability of the native soil.

Drawing STM-2 illustrates the proposed storm servicing and drainage scheme for the proposed NH development.

Drawing STM-3 schematically illustrates the proposed storage 'Tank'

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STORAGE SCHEMATIC

484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

PROJECT No.: 17-539

DATE: FEBRUARY 2019

SCALE: N.T.S.

FIGURE No.: **STM-3**

File: P:\Projects\12-381\Reports\Functional Servicing Report\Figures\FIGURE 1 - SITE LOCATION PLAN.dwg - Revised by <OSOMERVILLE> : Wed, Oct 03 2012 - 9:30am

7 GRADING DESIGN

Proposed grading will take into consideration the following requirements and constraints:

- Conform to City grading criteria;
- Match existing boundary grading conditions;
- Maintaining existing drainage boundaries;
- Provide minimum cover on existing and proposed servicing as well as proposed parking garages;
- Maximize the self-contained portion of the site conveying runoff to the storm sewer system(s);
- Provide major system stormwater detention;
- To retain and protect boundary trees in accordance with proposed tree preservation.

The existing south municipal boulevard along Plains Road East will be extended to the building from back of curb at 4%.

Drawing GR illustrates the proposal grading scheme for the proposed NH development.

8 EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION

An erosion and sedimentation control plan for the site will be designed in general conformance with City of Burlington and Conservation Halton guidelines and implemented for all construction activities. Due to the footprint of proposed parking garage construction in relation to the property size, most typical erosion and sedimentation control measures are not practical.

The following erosion and sediment control measures will be installed and maintained during construction:

- Temporary construction/sediment control fencing will be placed around the site perimeter prior to commencement of construction activities;
- Temporary pumping of stormwater from the parking garage excavation will be discharged via a sediment filter bag;
- Existing road catchbasins in the vicinity of construction activities and sediment tracking will be provided Siltation protection;
- The downstream storm sewer system will be regularly inspected during construction and maintenance will be performed as required;

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- All temporary erosion and sediment control measures will be routinely inspected and repaired as required during construction. Temporary controls will not be removed until the areas they serve are restored and stable;
- Gravel mud mats will be provided at construction vehicle access points to minimize off-site tracking of sediment.

Erosion and sediment control drawings will be completed as part of the detailed design.

9 CONCLUSIONS

This Functional Servicing/Stormwater Management Report has been prepared in support of National Homes (Plains Road) LP's zoning by-law amendment application. This report demonstrates that appropriate municipal services, including connection to existing City and Region infrastructure on Plains Road West and Nora Drive, are feasible to support the development proposed by the current site plan concept without adverse impact to existing infrastructure or the surrounding community, and in general accordance with the latest standards and criteria prepared by the City of Burlington and Halton Region.

Discussion in Section 6 indicates significant benefits to the City's downstream system from the proposed stormwater drainage concept. Section 6 also identifies challenges with meeting the City's erosion control criteria in the context of the available underground garage footprint. We respectfully request that the City waive or compromise on the erosion control criteria in this case in reliance upon the overall improvement to the downstream system.

Report prepared by:

Urbantech Consulting



Owen Somerville, P.Eng.
Senior Project Manager

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Appendix A

Preliminary Sanitary Sewer Design Sheet

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SANITARY SEWER DESIGN SHEET

PRELIMINARY

484 & 490 Plains Road East

City of Burlington, Region of Halton

PROJECT DETAILS

Project No: 17-539
Date: 18-Sep-17
Designed by: OS
Checked by: OS

DESIGN CRITERIA

Min Diameter =	200	mm	Avg. Domestic Flow =	275.0	l/c/d
Mannings 'n'=	0.013		Infiltration =	0.286	l/s/ha
Min. Velocity =	0.60	m/s	Max. Peaking Factor =	4.00	
Max. Velocity =	3.00	m/s	Min. Peaking Factor=	2.00	
Factor of Safety =	15	%			

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	RESIDENTIAL AREA (ha)	RESIDENTIAL ACC. AREA (ha)	RESIDENTIAL UNITS (#)	RESIDENTIAL DENISTY (P/ha)	RESIDENTIAL DENSITY (P/unit)	RESIDENTIAL POP	RESIDENTIAL ACCUM. RES. POP.	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL AREA (ha)	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL ACC. AREA (ha)	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL EQUIV. POP. (p/ha)	FLOW CALCULATIONS FLOW RATE (l/s/ha)	FLOW CALCULATIONS EQUIV. POP.	FLOW CALCULATIONS ACCUM. EQUIV. POP.	FLOW CALCULATIONS INFILTRATION (l/s)	FLOW CALCULATIONS TOTAL ACCUM. POP.	FLOW CALCULATIONS PEAKING FACTOR	FLOW CALCULATIONS RES. FLOW (l/s)	FLOW CALCULATIONS COMM. FLOW (l/s)	FLOW CALCULATIONS ACCUM. COMM. FLOW (l/s)	FLOW CALCULATIONS TOTAL FLOW (l/s)	PIPE DATA SLOPE (%)	PIPE DATA PIPE DIAMETER (mm)	PIPE DATA FULL FLOW CAPACITY (l/s)	PIPE DATA FULL FLOW VELOCITY (m/s)	PIPE DATA ACTUAL VELOCITY (m/s)	PIPE DATA PERCENT FULL (%)
2 X 8 STOREY		PLUG	1.84	1.84		285		525	525							0.5	525	3.96	6.6			7.1						
7 X TOWNHOUSE		PLUG	1.84	1.84		135		249	249							0.5	249	4.00	3.2			3.7						
NATIONAL HOMES	PLUG	13534		1.84					774							0.5	774	3.87	9.5			10.1	0.50	250	42.0	0.86	0.7	24%
PLAINS ROAD EAST	13534	13519		1.84					774			90				0.5	774	3.87	9.5			10.1	0.43	250	39.0	0.79	0.7	26%
PLAINS ROAD EAST	13519	13676		1.84					774	0.14	0.14	90		13	13	0.6	787	3.86	9.7			10.2	0.43	250	39.0	0.79	0.7	26%
PLAINS ROAD EAST	13676	13502		1.84					774	0.20	0.34	90		18	31	0.6	805	3.86	9.9			10.5	0.43	250	39.0	0.79	0.7	27%

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Appendix B

Water Analysis (Municipal Engineering Solutions)

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Municipal Engineering Solutions

September 22, 2017 Project No. 17003-04

Sent via email
Mr. David Leighton
Urbantech Consulting.
3760 14th Avenue, Suite 301
Markham, ON
L3R 3T7

Subject: Plains Road Burlington -Draft
Water Distribution Modeling
City of Burlington, Region of Halton

Dear Mr. Leighton,

We are pleased to submit our report entitled "Plains Road Development Watermain Analysis" outlining the results of our water distribution analysis for the proposed residential development in the City of Burlington, Region of Halton.

This development was incorporated into the Region of Halton's existing Infowater water models dated September 2017 and modeled utilizing the design information provided to Municipal Engineering Solutions. The findings of our analysis are summarized in the following report.

We trust you find this report satisfactory. Should you have any questions or require further clarification, please call.

Yours truly,

Municipal Engineering Solutions

Per: John C. Bourrie, P.Eng.

/LMC

File Location: D:\Projects\2017\17-020 Plains Road Halton 17003-04\3.0 Report\Final Sept 2017\17003-04 Plains Road Watermain Analysis_20170925.docx

55 Gilbank Drive, Aurora, Ontario L4G 6H9
Tel: 905.726.1016 Cell: 416.434.0186 Fax: 905.726.1225

PLAINS ROAD DEVELOPMENT

WATER ANALYSIS

PREPARED BY:

MUNICIPAL ENGINEERING SOLUTIONS

FOR:

URBANTECH CONSULTING
September 2017

Project Number: 17003-04

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Appendix A Demands
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Section 1 – INTRODUCTION

Municipal Engineering Solutions ("MES") was retained by Urbantech Consulting to conduct a hydraulic water analysis for the proposed Plains Road development located in the City of Burlington in the Region of Halton. As part of this hydraulic assessment MES was requested to undertake the following:

1. Calculate/verify water demands for the proposed development using Region of Halton, provincial and industry design standards;
2. Add the subject watermains/development to the Region's existing water model;
3. Run the model to size the subject mains to achieve service criteria during Average Day, Peak Hour and fire flow during Maximum Day demand; and
4. Prepare a Report summarizing the modeling results for agency review and design purposes.

1.1 Development Background

The Plains Road development is located at 484 Plains Road East between King Road and Waterdown Road in the City of Burlington. The development consists of 117 townhomes,276 condominium units plus 971 m^2 of commercial area within two apartment buildings that are replacing the existing commercial buildings. The proposed development is shown below on **Figure 1**.



Figure 1 - Proposed Plains Road Development

Section 2 – WATERMAIN DESIGN CRITERIA

The design criteria utilized to estimate the water demands for the hydraulic water model follows general industry standards and is calculated using the design criteria and guidelines outlined in the Region of Halton's 2015 Water and Wastewater Linear Design Manual, the Ministry of the Environment and Climate Change (MOECC) Watermain Design Criteria, and the Fire Underwriters Survey.

The following sections summarize the specific design criteria used to carry out the hydraulic watermain assessment for this development.

2.1 Equivalent Population Densities & Water Design Factors

To calculate the equivalent population and water design factors for this development MES used Region of Halton standard population densities as noted in the *"Region of Halton Water and Wastewater Linear Design Manual, April 2015 Version 3.00"*. **Table 1** summarizes the population densities and **Table 2** summarizes the average daily demand and peaking factors used for this analysis.

Table 1 – Equivalent Population Density

Type of Development	Equivalent Population (Persons/Ha)	Equivalent Population (Persons/Unit)
Single Family	55	3.52
Semi-Detached	100	3.52
Townhouse	135	2.664
Apartment	285	1.579
Light Commercial	90	
Community Services	40	

Source: Region of Halton Water and Wastewater Linear Design Manual, April 2015 and 2017 Development Charges Update October 2016

Table 2 - Water Design Factors

Type of Development	Average Daily Demand (m^3 per capita)	Maximum Daily Demand Peaking Factor	Peak Hourly Demand Peaking Factor
Residential	0.275	2.25	4.00
Industrial	0.275	2.25	2.25
Commercial	0.275	2.25	2.25
Community Services	0.275	2.25	2.25

Source: Region of Halton Water and Wastewater Linear Design Manual, April 2015

Section 3 –FLOW DEMANDS

Utilizing the equivalent population data from Table 1 and the corresponding Average Day, Maximum Day and Peak Hour data from Table 2 the water demands for this development were calculated.

3.1 Equivalent Population Flow Demands

The calculated demands for the development are summarized in **Table 3** and were assigned to an existing node, WFT18600.

Table 3 – Water Demand for Plains Road Development

Development	Average Day Demand (L/S)	Maximum Day Demand (L/S)	Peak Hour Demand (L/S)
Plains Road Node WFT18600	2.41	5.42	9.58

Fire Flow Demands

The fire demands for this development were calculated using the Fire Underwriters Survey ("FUS") formula outlined in the *'Water Supply For Public Fire Protection Guideline',* dated 1999. The largest calculated flow for each type of unit was utilized as appropriate for the site plan layout. The fire flows shown in **Table 4**. Details on the calculations are in **Appendix A**.

Table 4 - Fire Flow Requirements

Type of Development	Fire Flow (L/S)
Condominiums	233
Townhomes	233

Source: Fire Underwriters Survey

As noted, the fire flows in Table 4 above are calculated using the FUS formula. Table 5 below summarizes the criteria utilized to develop the fire flow requirements as well as the assumptions made. The largest townhome block, building E, was used to calculate the fire flow requirement for townhomes and assumes a firewall in the middle of the unit but no sprinkler system. For the apartments, the west building was considered. The gross floor areas were taken from the conceptual site plan drawing by Kirkor Architects and Planners. Once the detailed design data (specifics) for these building(s) are finalized the assumptions noted in Table 5 must be reviewed and confirmed by the appropriate designer (architect or sprinkler system designer) and any design/criteria changes required are to be reported to MES.

Table 5 – FUS Criteria/Assumptions

	Type of Development	
	Townhomes	Condominium
Type of Construction	Wood Frame Construction	Fire Resistive
Occupancy Type	Limited Combustible	Limited Combustible
Fire Protection (Sprinkler/Firewalls)	Firewall between units 12 & 13 (50% of total GFA) Assumes No Sprinklers Present.	No Firewalls Building will be sprinklered
Area Considered	Townhome Block Used & Maximum # of Units: Building E – 12 Units (24 Units in total) (Total GFA (50% total) ~1,192 m^2 Footprint of 397 m^2)	Building Used & # Units: Building A– 152 Units (Total GFA ~14,346 m^2 Footprint of 1769 m^2)

Note: For Additional Information on FUS Criteria Refer to Water Supply for Public Protection Guide, Fire Underwriters Survey, 1999

3.2 External Demands

The Region of Halton InfoWater models that was provided by the Region to MES included water demands for existing and known future developments within the Region.

Section 4 – OTHER SYSTEM REQUIREMENTS

4.1 System Pressure Requirements

In addition to meeting the various flow requirements, the system must also satisfy minimum and maximum pressure requirements as outlined by the Region of Halton. The Region's pressure requirements are outlined in the Water and Wastewater Linear Design Manual and stipulate the following:

1. The water system shall be designed to maintain as close as possible to a maximum working pressure of 690 kPa (100 psi) as a best management practice.
2. The minimum system pressure shall not be less than 140 kPa (20 psi) at any point in the water system under fire flow conditions.
3. Under normal operating conditions, the water system shall have a target minimum static pressure of 310 kPa. (45 psi). Under no operating conditions shall the static pressure within a distribution main fall below 275 kPa (40 psi).
4. The normal method of reduction of pressures to comply with the Ontario Building Code (reduction of pressures to 550 kPa, 80 psi) is by pressure reducing valves to be installed on individual services.

4.2 Watermain Sizing

The Region of Halton also stipulates minimum pipe sizes and requires that all watermains are adequately sized to maintain demand flows at the required pressures without causing excessive energy loss or result in water quality decay. The watermain system must therefore be designed to accommodate the greater of the following:

- Maximum day plus fire demand
- Peak hour demand

The minimum pipe size for commercial and industrial areas shall be 300 mm diameter and for residential areas the minimum pipe size shall be 150 mm diameter. For distribution systems providing fire protection the minimum pipe size shall be 150 mm diameter in accordance with Ministry of the Environment and Climate Change (MOECC) and NFPA requirements.

To provide appropriate fire protection, reliable supply and pressures the water distribution system should be looped wherever possible to improve supply security and water quality.

4.3 Watermain C-Factor

In designing and modeling of the pipes the Coefficient of Roughness (C-Factor) factors from the Region's design manual and as suggested by the MOECC were utilized. The Coefficient of Roughness assigned to each pipe size in summarized in **Table 6** below.

Table 6 - Hazen-Williams Coefficient of Roughness (C-Factors)

Size of Pipe (Diameter in mm)	Coefficient of Roughness (C)
150 mm	100
200 mm to 250 mm	110
300 mm to 600 mm	120
Greater Than 600 mm	130

Source: Region of Halton Water and Wastewater Linear Design Manual, April 2015

Section 5 – ANALYSIS & MODELING RESULTS

To conduct the hydraulic water analysis for the proposed development the water demands were estimated by MES using the design criteria previously discussed and incorporated the demands into the existing Region of Halton InfoWater models (May 2017) which was provided by the Region in June 2017. The following sections discusses the model setup and results.

5.1 Model Setup

The Plains Road development is located within pressure zone B1A (TWL 140.2 m). The Zone B1A is supplied by the Kingsway Drive Booster Pumping Station with storage in the Waterdown Reservoir. The B1A services elevations up to 107 m. The development site elevations are below 98.0 m and therefore should be adequately supplied by B1A.

The building site will have one supply connection that will then feed the entire development. The model shows there are three (3) existing B1A watermains located within the Plains Road road allowance – 300 mm, 600 mm and 400 mm. The Region's model shows that the existing site has connections to the 300 mm and the 400 mm watermains as shown in a clip from the model in **Figure 2.**

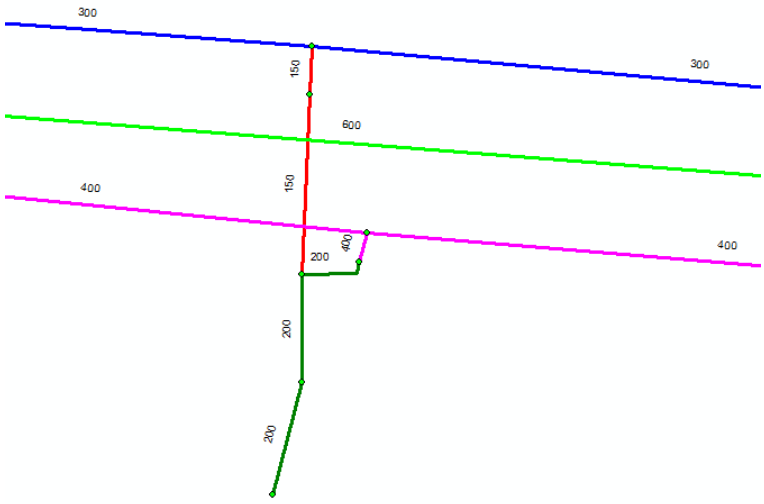


Figure 2 - Existing Plains Road Watermains Model Schematic

It was found that the diameters in the model for the connection to the 400 mm were incorrect. The model notes that the diameters were assumed. The as-built drawings obtained show a 150 mm connection as shown in **Figure 3.**

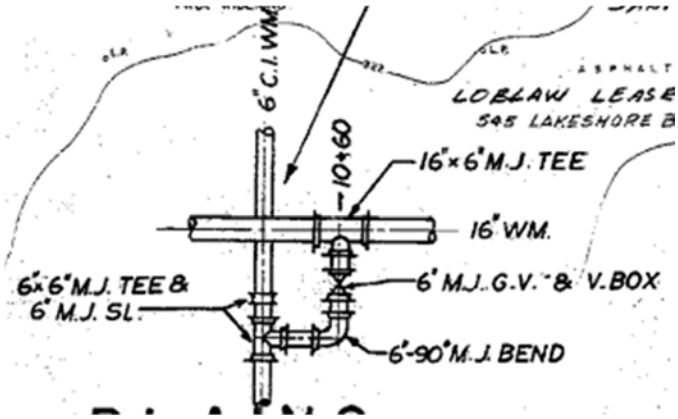


Figure 3 - As-Built Drawing V1-2 Connection Detail

Since the as-built drawings and water model show different size watermains the actual diameters servicing this block should be confirmed in the field.

The Region provided 2 models, one with the existing pressure districts; the other with the revised proposed pressure districts. The development was modeled under the 2016 planning scenario in the existing pressure district model and under the 2031 planning scenario in the future pressure district model to confirm that the development could be serviced adequately under existing and ultimate conditions.

The flow demands and service elevation information from the development were placed on an existing model node, WFT18600, that was the connection to the existing commercial development. The node was relocated to a more appropriate location for the new building and demands for losses removed in both existing and future water models to reflect future conditions and the system analysis was carried out. Friction factor for the pipes were assigned according to Table 5.

5.2 Watermain Sizing and System Pressures

The analysis was conducted under 2016 with the existing zone boundaries and 2031 servicing conditions with the future zone boundaries for Average Day, Maximum Day, Peak Hour and Maximum day plus Fire demands to size the watermains and meet the pressure requirements. The pipe size and layout are shown in **Appendix B**.

The supply was sized at 200 mm from the connection to the 400 mm watermain according to the results of average day, maximum day, maximum day plus fire, and peak hour scenarios. The 200 mm supply should replace the 150 mm connections on the south side of the road and connect to the 400 mm pipe. Replacing the 150 mm with a 200 mm pipe across Plains Road is also an option but would require open cutting of the road to connect to the 300 mm diameter watermain on the north side of the road.

It should be noted that the fire flow demands are based on the FUS calculation but the sprinkler system design requirements may be different as sprinkler systems tend to require lower flows at pressures above 20 psi (140 kPa). When the sprinkler design is completed, this analysis should be updated to confirm that the sprinkler requirements can be met.

Modeled service pressures at the development connection point, Node WFT18600, are summarized in **Table 6**. All pressures lie within the required operating range under average day, maximum day, maximum day plus fire flow and peak hour demands. Detailed pipe and node tables for the various scenarios modelled are attached to this report in **Appendix B**. The results of the immediately surrounding nodes and pipes are included in addition to the connection node WFT18600.

Table 7 - Modeled Service Pressures

Scenario	Average Day	Maximum Day	Peak Hour	Max. Day + Fire
2016	58.97 psi (406.6 kPa)	59.01 psi (406.8 kPa)	58.65 psi (404.4 kPa)	340 L/s@ 20 psi
2031	58.97 psi (406.6 kPa)	59.02 psi (406.9 kPa)	58.64 psi (404.3 kPa)	342.5 L/s@ 20 psi

Section 6 – CONCLUSIONS/RECOMMEDATIONS

The proposed watermain connection for the Plains Road development can achieve hydraulic requirements as prescribed by the Region of Halton watermain design criteria as summarized below.

- The service pressures from the watermain are expected to range between 59 psi to 58.6 psi (404 kPa to 448 kPa) under interim conditions and between 59 psi to 58.6 psi (404 kPa to 407 kPa) under ultimate conditions.
- The available fire flow meets or exceeds the required fire flow demands at the minimum pressure of 20 psi (140 kPa) based on the proposed watermain configuration and assumptions made within this report.
- The FUS criteria summarized in Table 5 and Appendix A, including all assumptions and building configurations, must be reviewed and confirmed by the designer(s), architect and mechanical consultant when additional information becomes available to ensure the criteria used to calculate the fire flows within this report are still valid prior to implementation and construction.
- When the sprinkler design is completed, the results of this report should be reviewed to confirm that the sprinkler requirements can be met.
- This report, including all modeling assumptions used, is to be submitted to and reviewed by the water operating authority (municipality) to confirm that the modeling parameters used are acceptable to the operating authority and/or confirm if modified domestic or fire flow requirements are required or should be implemented for this particular development.

Appendix A

Demands

Equivalent Population by Unit

(2017 Development Charges Update, October 2016)

Type of Development	Equivalent Population Density *(Person/Unit)*
Single Family or Semi-Detached	3.5
Townhouse	2.7
Apartment	1.6

Equivalent Population by Area

Type of Development	Equivalent Population Density *(Person/Hectare)*	Average Day Demands *(m3/ha/day)*
Single Family	55	15.13
Semi-detached duplex and 4-plex	100	27.50
Townhouse, Maisonette (<6 stories)	135	37.13
Apartments (>6 stories)	285	78.38
Light Commercial Areas	90	24.75
Community Services	40	11.00
Light Industrial Areas	125	34.38
Hospitals (persons/bed)	4	

Water Design Factors

Average Daily Demand (m3/capita)	0.275
Maximum Daily Demand P.F.	2.25
Maximum Hourly Demand P.F.	
Residential	*4*
I/C/I	*2.25*

Cofficient of Roughness

Size of Pipe (mm Dia.)	Coefficient of Roughness (C)
150	100
200-250	110
300-600	120
Over 600	130

Minimum Pipe Size

Type of Development	Size of Pipe (mm Dia.)
Residential	150
Commercial/Industrial/Community	300

Working Pressures

Parameter	Pressure
Normal Condition	
Minimum Pressure	275 kPa (40 psi)
Target Pressure	310 kPa (45 psi)
Maximum (Building Code)	550 kPa (80 psi)
Maximum (Halton)	690 kPa (100 psi)
Fire Flow Conditions	
Minimum Pressure	140 kPa (20 psi)

Water Demand
Plains Road Development, Burlington On
September 19, 2017

Node	Phase	Elevation	Type of Development							Equivalent Population		Demands			Fire Flow Demands
			Single Family	Semi-Detached	Townhouse	Apartment	Commercial	Schools	Industrial	Total Population	Total Population	ADD	MDD	PHD	
		(m)	*(units)*	*(units)*	*(units)*	*(units)*	*(ha)*	*(ha)*	*(ha)*	*(Residential)*	*(ICI)*	*(L/s)*	*(L/s)*	*(L/s)*	*(L/s)*
WFT18600					*117*	*276*	*0.097*			747	9	2.41	5.42	9.58	233
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
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										0	0	0.00	0.00	0.00	
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										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
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										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
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										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
										0	0	0.00	0.00	0.00	
Total			**0**	**0**	**117**	**276**	**0.10**	**0.00**	**0**	**747**	**9**	**2.41**	**5.42**	**9.58**	

Calculations are based on "Water Supply for Public Fire Protection Guide" by Fire Underwriters Survey

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building A**
Project Number:	17003-04	Firewalls/Sprinkler:	**Sprinklers**
Project Location:	Halton Region	Number of Units/Unit #'s	**152**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C
Type of Construction[b]	fire-resistive construction
Foot Print Area	1769.5 sq metres
Storeys	8
C =	0.6
A =	14346
F =	**16000 L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible
Hazard Allowance	-0.15
	-2400 L/min
Adjusted Fire Flow	**13600 L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	30%	50%
Standard Water Supply	NO	10%	
Fully Supervised system	NO	10%	

Sprinkler Credit **6800 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			50%
Distance to Building (m)	over 45	0%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	3.1 to 10	20%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **6800 L/min**

Total Required Fire Flow (rounded)	**14000 L/min**
	233 L/sec

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building B**
Project Number:	17003-04	Firewalls/Sprinkler:	**Sprinklers**
Project Location:	Halton Region	Number of Units/Unit #'s	**124**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	fire-resistive construction	
Foot Print Area	1719.6	sq metres
Storeys	8	
C =	0.6	
A =	12284.9	
F =	**15000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-2250	L/min
Adjusted Fire Flow	**12750**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	30%	50%
Standard Water Supply	NO	10%	
Fully Supervised system	NO	10%	

Sprinkler Credit **6375 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			45%
Distance to Building (m)	over 45	0%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5740 L/min**

Total Required Fire Flow	**12000**	**L/min**
(rounded)	**200**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building C**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**12 (middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	198.6	sq metres
Storeys	3	
C =	1.5	
A =	595.8	
F =	**8000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1200	L/min
Adjusted Fire Flow	**6800**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			
Distance to Building (m)	3.1 to 10	20%	75%
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	0 to 3	25%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5100 L/min**

Total Required Fire Flow	**12000**	**L/min**
(rounded)	**200**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building D**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**15(firewall - 8 units)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	271.667	sq metres
Storeys	3	
C =	1.5	
A =	815	
F =	**9000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1350	L/min
Adjusted Fire Flow	**7650**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			65%
Distance to Building (m)	0 to 3	25%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	20.1 to 30	10%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **4970 L/min**

Total Required Fire Flow	**13000**	**L/min**
(rounded)	**217**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building E**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**24(middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C
Type of Construction[b]	wood frame construction
Foot Print Area	397.2 sq metres
Storeys	3
C =	1.5
A =	1191.6
F =	**11000 L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible
Hazard Allowance	-0.15
	-1650 L/min
Adjusted Fire Flow	**9350 L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	20.1 to 30	10%	
Length (ft) by height in storeys	over 120		
East Side			55%
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5140 L/min**

Total Required Fire Flow	**14000 L/min**
(rounded)	**233 L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building F**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**18 (middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	297.9	sq metres
Storeys	3	
C =	1.5	
A =	893.7	
F =	**10000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1500	L/min
Adjusted Fire Flow	**8500**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			65%
Distance to Building (m)	0 to 3	25%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	20.1 to 30	10%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5530 L/min**

Total Required Fire Flow	**14000**	**L/min**
(rounded)	**233**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building G**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**12(middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	582	sq metres
Storeys	3	
C =	1.5	
A =	595.8	
F =	**8000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1200	L/min
Adjusted Fire Flow	**6800**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			55%
Distance to Building (m)	30.1 to 45	0%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	0 to 3	25%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **3740 L/min**

Total Required Fire Flow	**11000**	**L/min**
(rounded)	**183**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building H**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**18(middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	582	sq metres
Storeys	3	
C =	1.5	
A =	893.7	
F =	**10000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1500	L/min
Adjusted Fire Flow	**8500**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			60%
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5100 L/min**

Total Required Fire Flow	**14000**	**L/min**
(rounded)	**233**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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FUS CALCULATION

Project:	Plains Road	Building Type/Block #	**Building J**
Project Number:	17003-04	Firewalls/Sprinkler:	**Firewall**
Project Location:	Halton Region	Number of Units/Unit #'s	**18(middle firewall)**

1.0 FUS Formula

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

where: F = required fire flow in litres per minute;
C = the Coefficient related to the type of construction; and
A = the total floor area in square metres (including all storeys but excluding basements at least 50% below grade)[a]

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
Foot Print Area	582	sq metres
Storeys	3	
C =	1.5	
A =	893.7	
F =	**10000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1500	L/min
Adjusted Fire Flow	**8500**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			55%
Distance to Building (m)	20.1 to 30	10%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	91 to 120		

*max 75%

Exposures Surcharge **4680 L/min**

Total Required Fire Flow	**13000**	**L/min**
(rounded)	**217**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

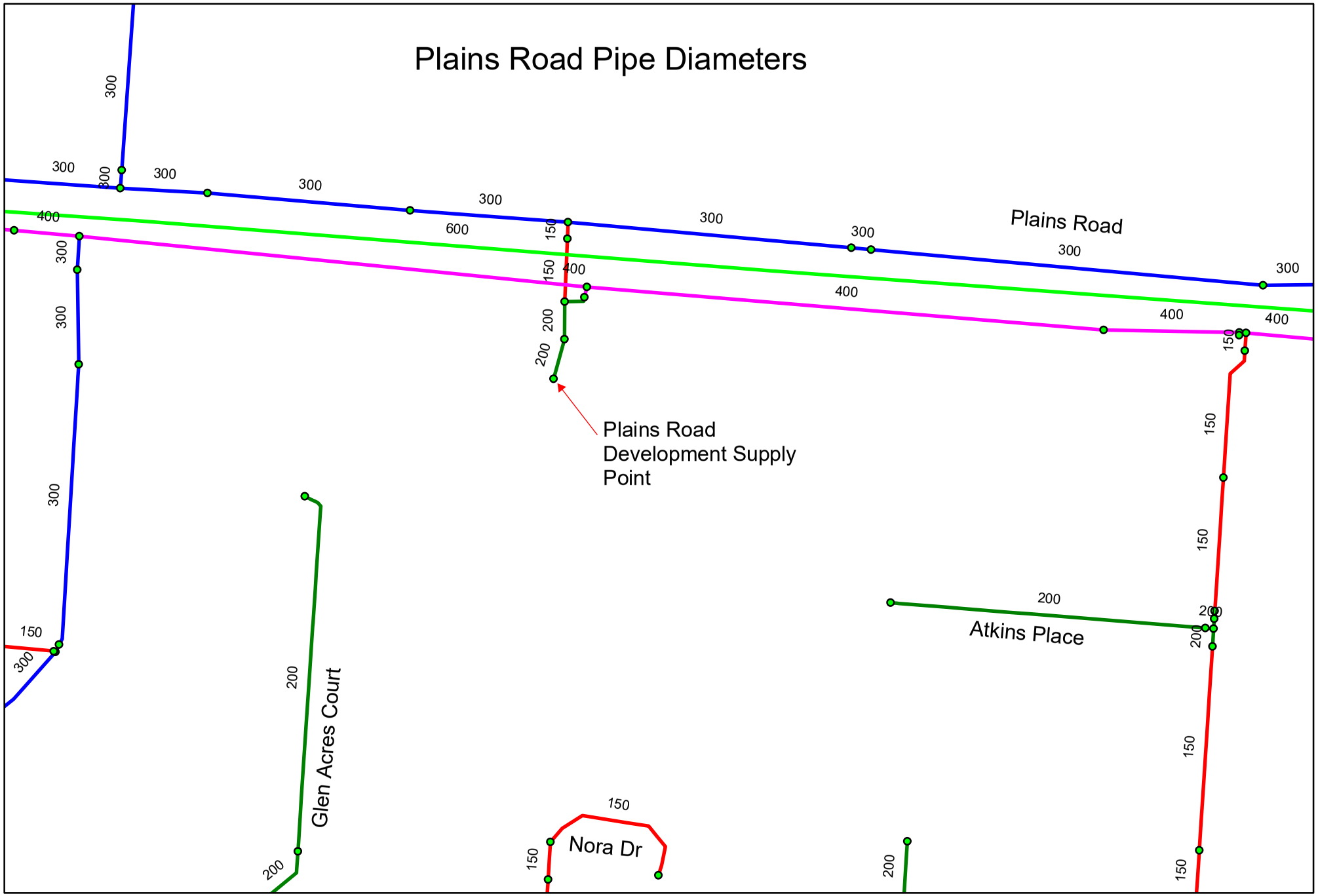
b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

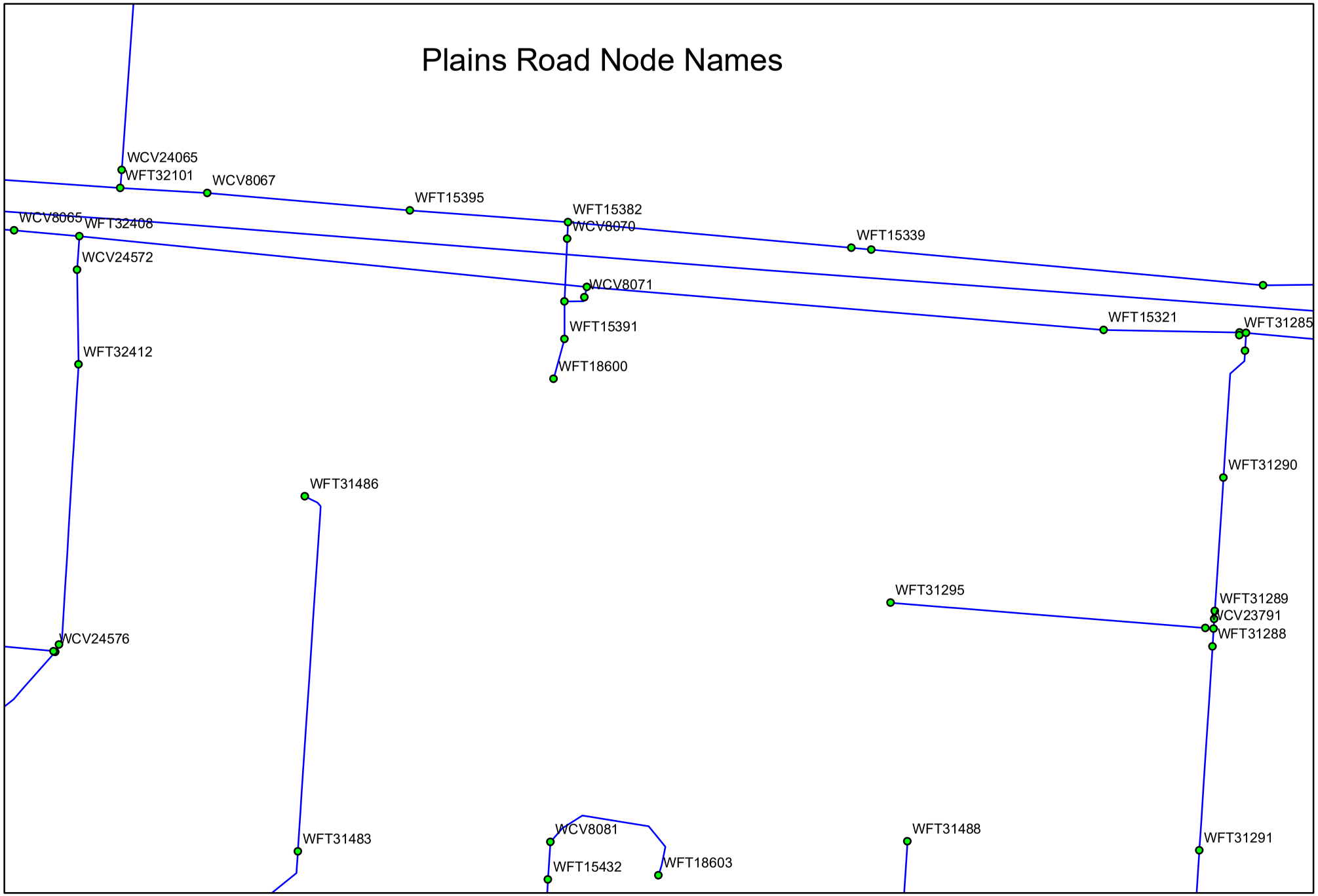
c) Non-combustible=-25%, Limited combusitble=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

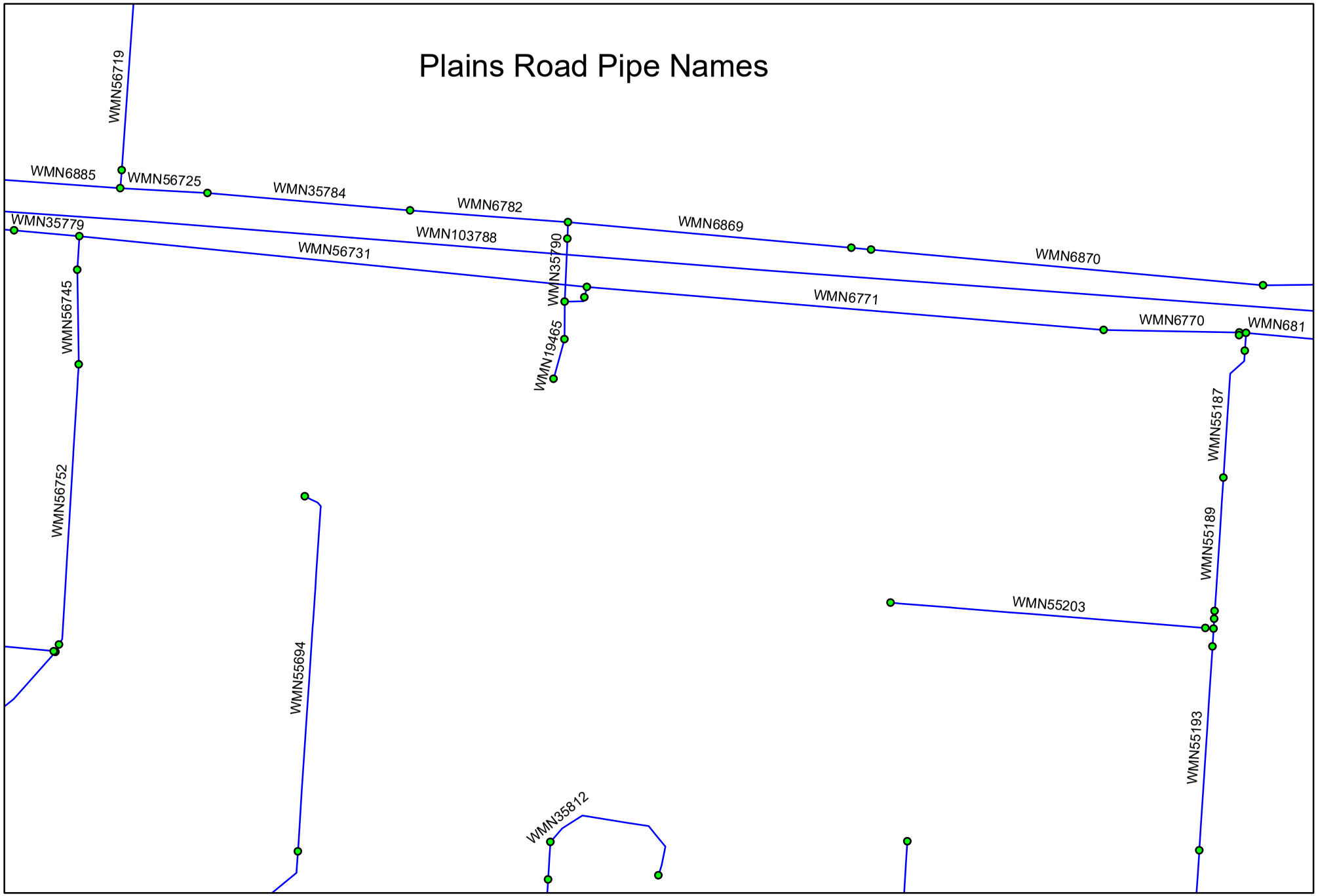
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Appendix B

Model Results


Plains Road Pipe Diameters
Plains Road
Plains Road
Development Supply
Point
Glen Acres Court
Nora Dr
Atkins Place
300
400
600
200
150


Plains Road Node Names
WCV24065
WFT32101
WCV8067
WFT15395
WFT15382
WCV8070
WCV8065
WFT32408
WFT15339
WCV24572
WCV8071
WFT15321
WFT31285
WFT15391
WFT32412
WFT18600
WFT31290
WFT31486
WFT31295
WFT31289
WCV23791
WFT31288
WCV24576
WFT31483
WCV8081
WFT31488
WFT31291
WFT15432
WFT18603


Plains Road Pipe Names
WMN56719
WMN6885
WMN56725
WMN35784
WMN6782
WMN6869
WMN6870
WMN35779
WMN103788
WMN56731
WMN35790
WMN6771
WMN6770
WMN681
WMN56745
WMN19465
WMN55187
WMN56752
WMN55189
WMN55203
WMN55694
WMN35812
WMN55193

2016 Conditions
Plains Road Development, Burlington On
September 22, 2017

Municipal Engineering Solutions

Average Day

Node Table

ID	Demand	Elevation	Head	Pressure
	(L/s)	*(m)*	*(m)*	*(psi)*
WCV8070	0.01	98.33	139.22	58.14
WCV8071	0.01	98.22	139.23	58.29
WFT15321	0.04	97.70	139.23	59.04
WFT15339	0.05	98.07	139.23	58.51
WFT15382	0.05	98.25	139.22	58.25
WFT15385	0.06	98.16	139.23	58.37
WFT15387	0.01	98.25	139.22	58.26
WFT15391	0.08	98.13	139.22	58.41
WFT15395	0.01	98.24	139.22	58.26
WFT18600	2.41	97.74	139.22	58.97
WFT32408	0.03	98.31	139.22	58.16

MIN		**97.70**		**58.14**
MAX		**98.33**		**59.04**

Pipe Table

ID	From Node	To Node	Length	Diameter	Roughness	Flow	Velocity
			(m)	*(mm)*	*(C)*	*(L/s)*	*(m/s)*
WMN19464	WFT15387	WFT15391	12.70	200	110	0.22	0.08
WMN19465	WFT15391	WFT18600	14.27	200	110	0.21	0.08
WMN35789	WFT15382	WCV8070	5.65	150	98	0.02	0.01
WMN35790	WCV8070	WFT15387	21.26	150	98	0.02	0.01
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.20	0.07
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.20	0.07
WMN56731	WFT15385	WFT32408	172.63	400	111	0.84	0.08
WMN6771	WFT15321	WFT15385	175.42	400	111	1.05	0.10
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.24	0.04
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.26	0.04

Maximum Day

Node Table

ID	Demand	Elevation	Head	Pressure
	(L/s)	*(m)*	*(m)*	*(psi)*
WCV8070	0.01	98.33	139.26	58.19
WCV8071	0.01	98.22	139.26	58.34
WFT15321	0.07	97.70	139.29	59.11
WFT15339	0.09	98.07	139.27	58.56
WFT15382	0.09	98.25	139.26	58.30
WFT15385	0.11	98.16	139.26	58.43
WFT15387	0.01	98.25	139.26	58.31
WFT15391	0.16	98.13	139.26	58.46
WFT15395	0.01	98.24	139.26	58.31
WFT18600	5.43	97.74	139.25	59.01
WFT32408	0.06	98.31	139.25	58.20

MIN		**97.70**		**58.19**
MAX		**98.33**		**59.11**

Pipe Table

ID	From Node	To Node	Length	Diameter	Roughness	Flow	Velocity
			(m)	*(mm)*	*(C)*	*(L/s)*	*(m/s)*
WMN19464	WFT15387	WFT15391	12.70	200	110	0.48	0.18
WMN19465	WFT15391	WFT18600	14.27	200	110	0.47	0.17
WMN35789	WFT15382	WCV8070	5.65	150	98	0.06	0.04
WMN35790	WCV8070	WFT15387	21.26	150	98	0.06	0.04
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.43	0.16
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.43	0.16
WMN56731	WFT15385	WFT32408	172.63	400	111	1.51	0.14
WMN6771	WFT15321	WFT15385	175.42	400	111	1.95	0.18
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.42	0.07
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.48	0.08

Peak Hour

Node Table

ID	Demand	Elevation	Head	Pressure
	(L/s)	*(m)*	*(m)*	*(psi)*
WCV8070	0.02	98.33	139.03	57.86
WCV8071	0.02	98.22	139.03	58.01
WFT15321	0.11	97.70	139.06	58.79
WFT15339	0.15	98.07	139.03	58.23
WFT15382	0.15	98.25	139.03	57.97
WFT15385	0.18	98.16	139.03	58.10
WFT15387	0.02	98.25	139.02	57.97
WFT15391	0.25	98.13	139.01	58.11
WFT15395	0.02	98.24	139.03	57.98
WFT18600	9.58	97.74	139.00	58.65
WFT32408	0.09	98.31	139.02	57.87

MIN		**97.70**		**57.86**
MAX		**98.33**		**58.79**

Pipe Table

ID	From Node	To Node	Length	Diameter	Roughness	Flow	Velocity
			(m)	*(mm)*	*(C)*	*(L/s)*	*(m/s)*
WMN19464	WFT15387	WFT15391	12.70	200	110	0.85	0.31
WMN19465	WFT15391	WFT18600	14.27	200	110	0.83	0.30
WMN35789	WFT15382	WCV8070	5.65	150	98	0.16	0.11
WMN35790	WCV8070	WFT15387	21.26	150	98	0.16	0.10
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.69	0.26
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.69	0.26
WMN56731	WFT15385	WFT32408	172.63	400	111	1.41	0.13
WMN6771	WFT15321	WFT15385	175.42	400	111	2.12	0.19
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.20	0.03
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.37	0.06

Fire Flow Table

ID	Total Demand	Available Flow	Fire Flow Met?
	(L/s)	*(L/s)*	
WFT18600	238.43	340.26	TRUE

2031 Conditions
Plains Road Development, Burlington On
September 22, 2017

Municipal Engineering Solutions

Average Day

Node Table

ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
WCV8070	0.01	98.33	139.22	58.14
WCV8071	0.01	98.22	139.22	58.29
WFT15321	0.04	97.70	139.23	59.04
WFT15339	0.05	98.07	139.23	58.51
WFT15382	0.05	98.25	139.22	58.25
WFT15385	0.06	98.16	139.22	58.37
WFT15387	0.01	98.25	139.22	58.26
WFT15391	0.09	98.13	139.22	58.41
WFT15395	0.01	98.24	139.22	58.26
WFT18600	2.41	97.74	139.22	58.97
WFT32408	0.03	98.31	139.22	58.16

MIN		**97.70**		**58.14**
MAX		**98.33**		**59.04**

Pipe Table

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness (C)	Flow (L/s)	Velocity (m/s)
WMN19464	WFT15387	WFT15391	12.70	200	110	0.22	0.08
WMN19465	WFT15391	WFT18600	13.84	200	110	0.21	0.08
WMN35789	WFT15382	WCV8070	5.65	150	98	0.01	0.01
WMN35790	WCV8070	WFT15387	21.26	150	98	0.01	0.01
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.20	0.08
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.21	0.08
WMN56731	WFT15385	WFT32408	172.63	400	111	0.83	0.08
WMN6771	WFT15321	WFT15385	175.42	400	111	1.04	0.10
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.24	0.04
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.25	0.04

Maximum Day

Node Table

ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
WCV8070	0.02	98.33	139.27	58.20
WCV8071	0.02	98.22	139.27	58.36
WFT15321	0.07	97.70	139.30	59.13
WFT15339	0.10	98.07	139.27	58.58
WFT15382	0.10	98.25	139.27	58.31
WFT15385	0.12	98.16	139.27	58.44
WFT15387	0.02	98.25	139.27	58.32
WFT15391	0.17	98.13	139.26	58.47
WFT15395	0.02	98.24	139.27	58.32
WFT18600	5.42	97.74	139.26	59.02
WFT32408	0.07	98.31	139.26	58.21

MIN		**97.70**		**58.20**
MAX		**98.33**		**59.13**

Pipe Table

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness (C)	Flow (L/s)	Velocity (m/s)
WMN19464	WFT15387	WFT15391	12.70	200	110	0.48	0.18
WMN19465	WFT15391	WFT18600	14.28	200	110	0.47	0.17
WMN35789	WFT15382	WCV8070	5.65	150	98	0.05	0.03
WMN35790	WCV8070	WFT15387	21.26	150	98	0.05	0.03
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.44	0.16
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.44	0.16
WMN56731	WFT15385	WFT32408	172.63	400	111	1.55	0.14
WMN6771	WFT15321	WFT15385	175.42	400	111	2.00	0.18
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.44	0.07
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.50	0.08

Peak Hour

Node Table

ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (psi)
WCV8070	0.03	98.33	139.02	57.85
WCV8071	0.03	98.22	139.02	58.00
WFT15321	0.12	97.70	139.05	58.78
WFT15339	0.16	98.07	139.03	58.22
WFT15382	0.16	98.25	139.02	57.96
WFT15385	0.19	98.16	139.03	58.09
WFT15387	0.03	98.25	139.02	57.96
WFT15391	0.26	98.13	139.01	58.10
WFT15395	0.03	98.24	139.02	57.97
WFT18600	9.58	97.74	139.00	58.64
WFT32408	0.10	98.31	139.01	57.86

MIN		**97.70**		**57.85**
MAX		**98.33**		**58.78**

Pipe Table

ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness (C)	Flow (L/s)	Velocity (m/s)
WMN19464	WFT15387	WFT15391	12.70	200	110	0.85	0.31
WMN19465	WFT15391	WFT18600	14.28	200	110	0.83	0.30
WMN35789	WFT15382	WCV8070	5.65	150	98	0.14	0.09
WMN35790	WCV8070	WFT15387	21.26	150	98	0.13	0.09
WMN35791	WFT15387	WCV8071	7.80	200	110	-0.72	0.27
WMN35792	WCV8071	WFT15385	3.60	200	110	-0.72	0.27
WMN56731	WFT15385	WFT32408	172.63	400	111	1.45	0.13
WMN6771	WFT15321	WFT15385	175.42	400	111	2.19	0.20
WMN6782	WFT15395	WFT15382	53.61	300	80	-0.29	0.05
WMN6869	WFT15382	WFT15339	96.30	300	89	-0.44	0.07

Fire Flow Table

ID	Total Demand (L/s)	Available Flow (L/s)	Fire Flow Met?
WFT18600	238.42	340.71	TRUE

Appendix C

Stormwater Analysis

- Existing/Post-Development Model Schematics
  - Model Output
- Storm Tank Sizing Scenarios
  - Total Site Comparison
- Stormceptor Sizing Report
  - STC-4000 Detail

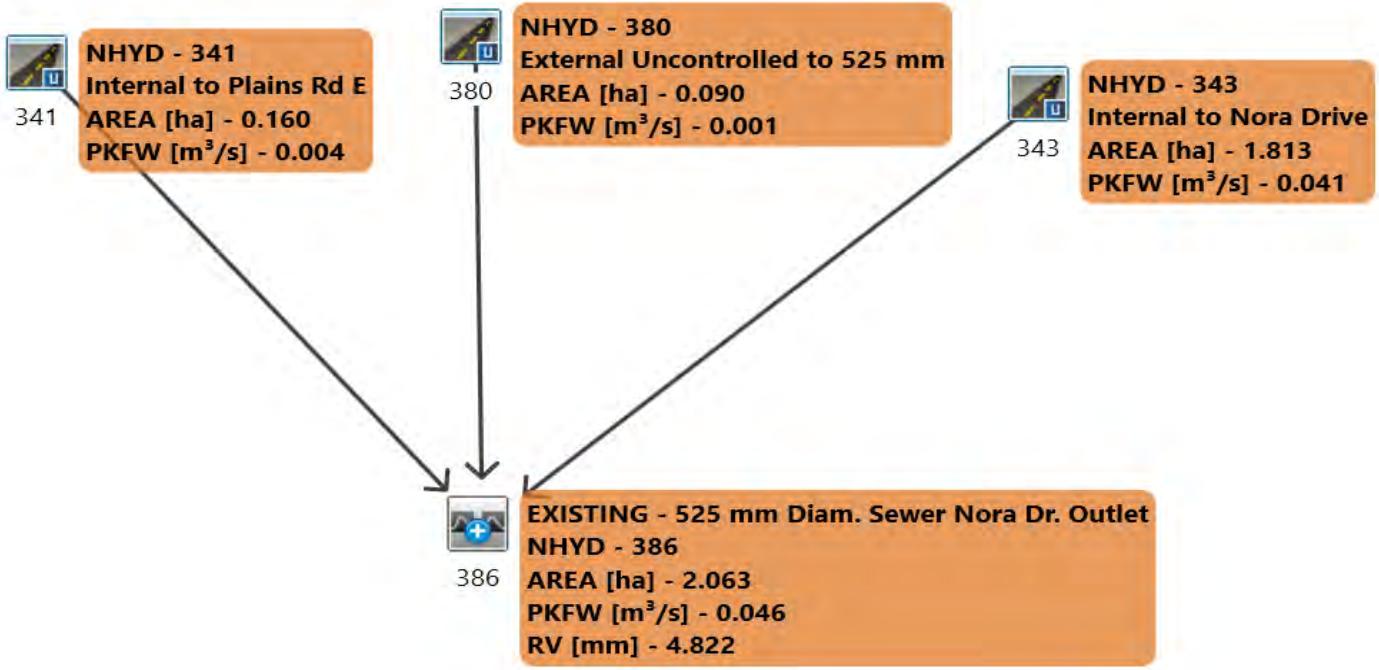
Urbantech® Consulting, A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301 Markham, Ontario L3R 3T7
TEL: 905.946.9461 FAX: 905.946.9595
www.urbantech.com

EXISTING CONDITIONS MODEL (VO5)

urbantech

Project Name: 484 Plains Road East
Municipality: City of Burlington
Project No.: 17-539
Date: 13-Feb-19

Prepared by: L.M.
Checked by: A.F.
Submission #:

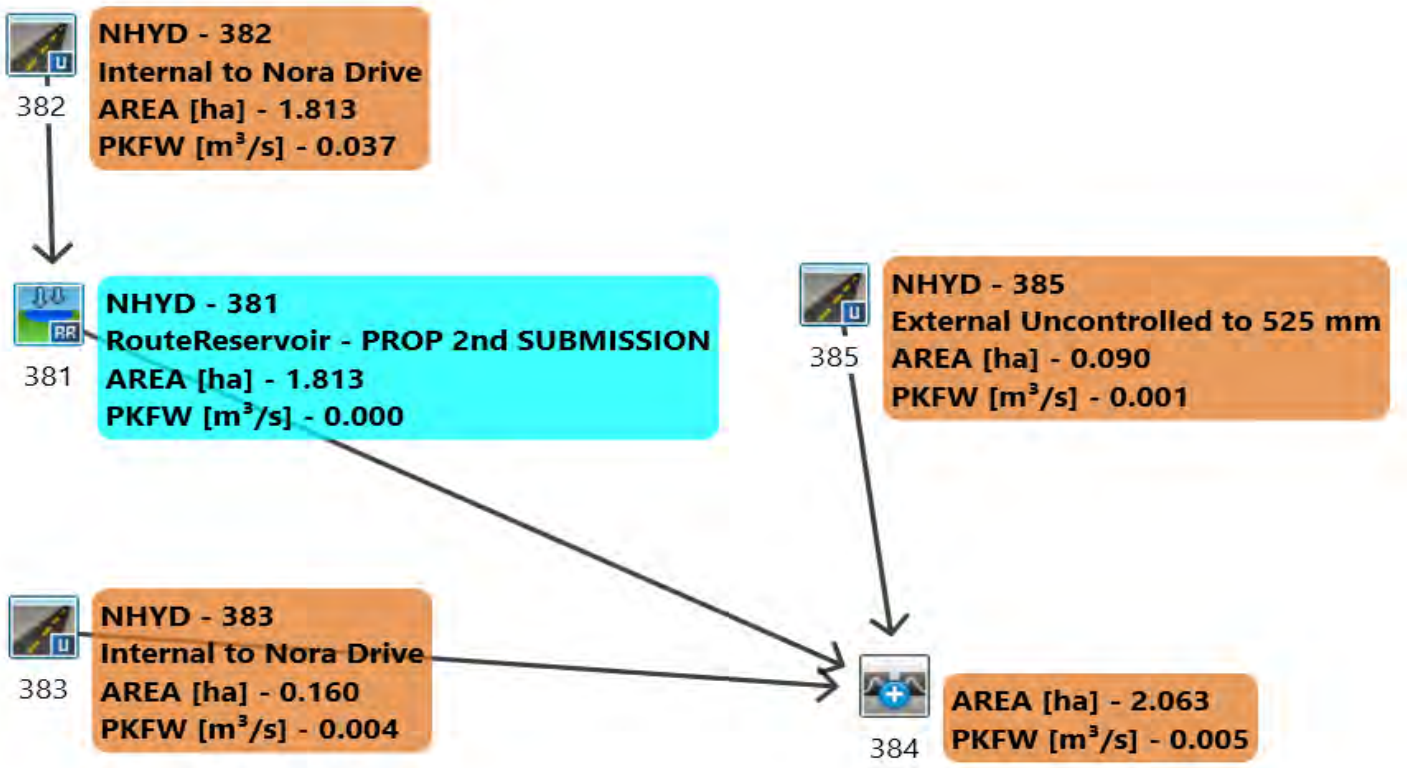


POST-DEVELOPMENT MODEL

urbantech

Project Name: 484 Plains Road East
Municipality: City of Burlington
Project No.: 17-539
Date: 13-Feb-19

Prepared by: L.M.
Checked by: A.F.
Submission #:

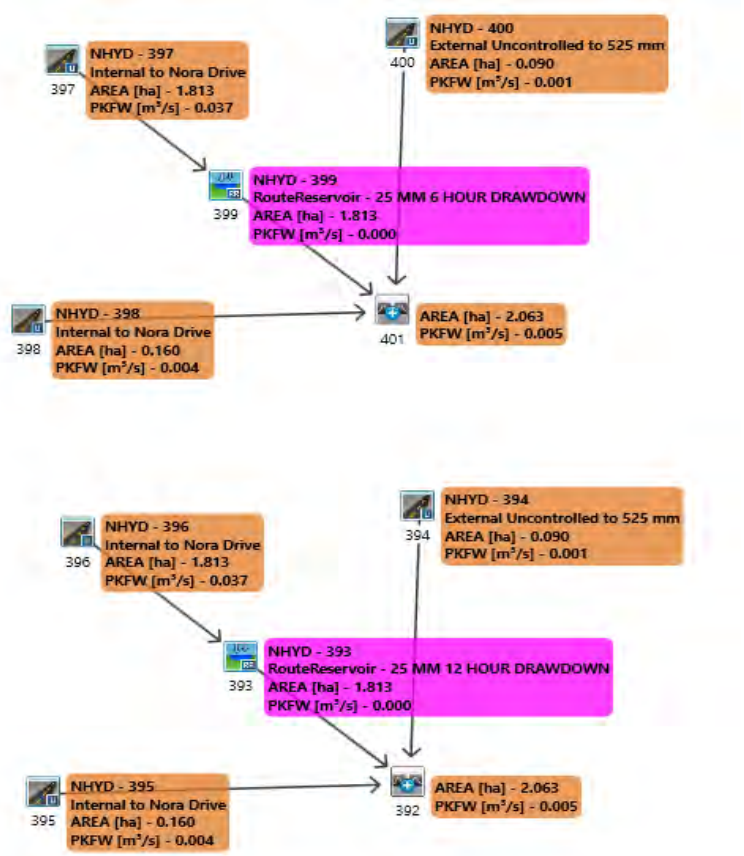


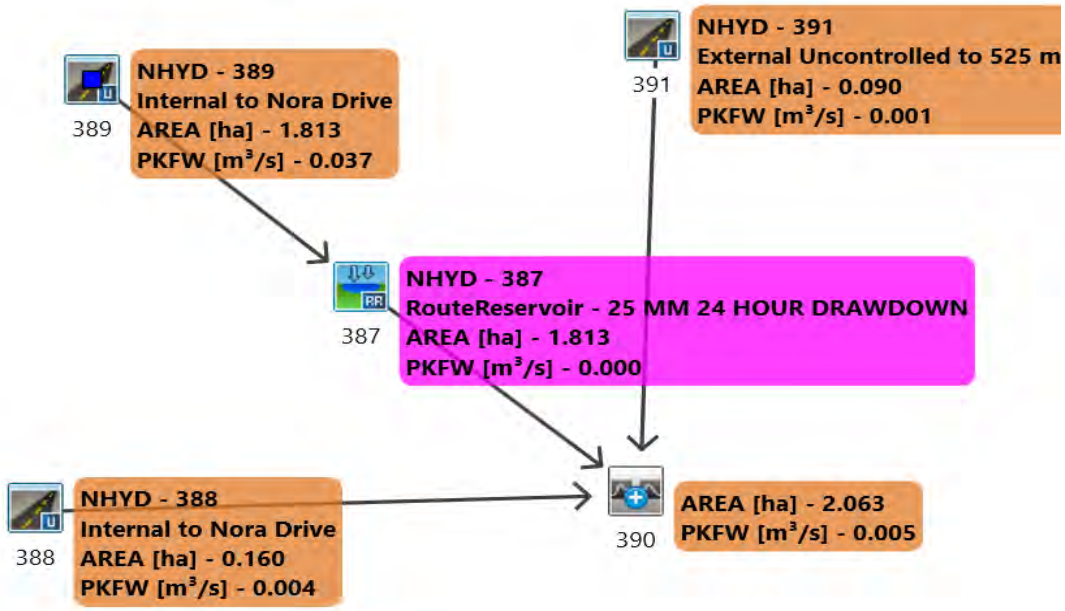
Storm Tank Scenarios - 25 mm Rain Event - 6, 12 and 24-hour Drawdowns

urbantech

Project Name: 484 Plains Road East
Municipality: City of Burlington
Project No.: 17-589
Date: 13-Feb-19

Prepared by: L.M
Checked by: A.F.
Submission #:



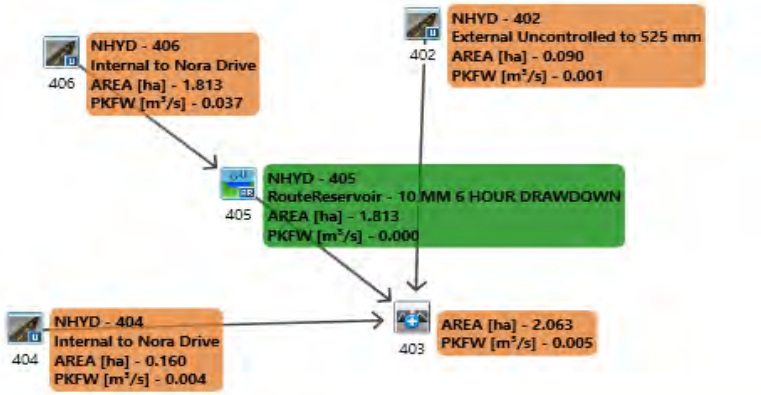

NHYD - 389
Internal to Nora Drive
AREA [ha] - 1.813
PKFW [m³/s] - 0.037
389
NHYD - 391
External Uncontrolled to 525 m
AREA [ha] - 0.090
PKFW [m³/s] - 0.001
391
NHYD - 387
RouteReservoir - 25 MM 24 HOUR DRAWDOWN
AREA [ha] - 1.813
PKFW [m³/s] - 0.000
387
NHYD - 388
Internal to Nora Drive
AREA [ha] - 0.160
PKFW [m³/s] - 0.004
388
AREA [ha] - 2.063
PKFW [m³/s] - 0.005
390

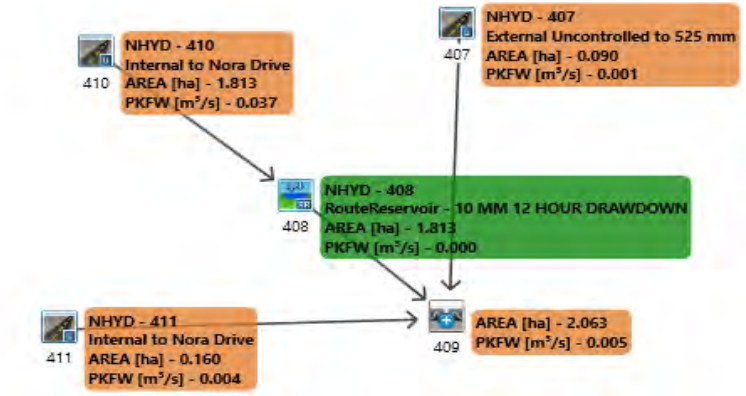
Storm Tank Scenarios - 10 mm Rain Event - 6, 12 and 24-hour Drawdowns

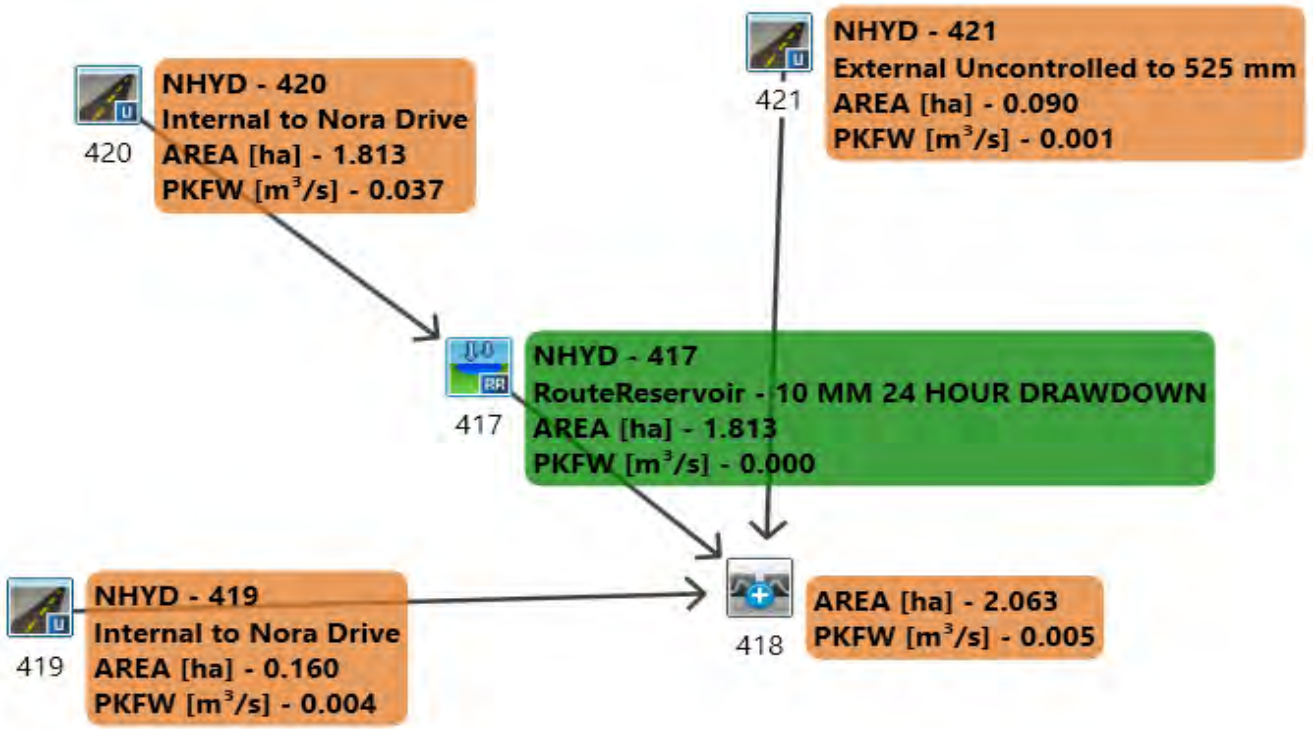
urbantech

Project Name: 484 Plains Road East
Municipality: City of Burlington
Project No.: 17-589
Date: 13-Feb-19

Prepared by: D.L.
Checked by: A.F.
Submission #:






NHYD - 420
Internal to Nora Drive
AREA [ha] - 1.813
PKFW [m³/s] - 0.037
420
NHYD - 421
External Uncontrolled to 525 mm
AREA [ha] - 0.090
PKFW [m³/s] - 0.001
421
NHYD - 417
RouteReservoir - 10 MM 24 HOUR DRAWDOWN
AREA [ha] - 1.813
PKFW [m³/s] - 0.000
417
NHYD - 419
Internal to Nora Drive
AREA [ha] - 0.160
PKFW [m³/s] - 0.004
419
AREA [ha] - 2.063
PKFW [m³/s] - 0.005
418

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
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        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 02-13-2019                          TIME: 09:45:48

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
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  ** SIMULATION : 1__5 mm                       **
  ************************************************


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| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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

--------------------
| CALIB            |
| STANDHYD (  0358)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
              0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
              0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
              0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
              0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
              0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
              0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
              0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
              0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
              0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
              0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
              1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
               over (min)        5.00        55.00
     Storage Coeff.  (min)=       6.78 (ii)   54.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        55.00
     Unit Hyd. peak  (cms)=       0.18         0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.00      0.037 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.42       1.50
     RUNOFF VOLUME    (mm)=       5.00         1.18       4.60
     TOTAL RAINFALL   (mm)=       5.00         5.00       5.00
     RUNOFF COEFFICIENT   =       1.00         0.24       0.92


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0361)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  0.3120     0.0220
                         0.3110     0.0010     |  0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0358)     1.813     0.037      1.50       4.60
   OUTFLOW: ID= 1 (  0361)     1.813     0.038      1.50       4.60

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.64
                  TIME SHIFT OF PEAK FLOW          (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0375)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
              0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
              0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
              0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
```

```
              0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
              0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
              0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
              0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
              0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
              0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
              0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
              1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
           over (min)            5.00        55.00
     Storage Coeff.  (min)=      3.27 (ii)   51.45 (ii)
     Unit Hyd. Tpeak (min)=      5.00        55.00
     Unit Hyd. peak  (cms)=      0.27         0.02
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.00          0.004 (iii)
     TIME TO PEAK    (hrs)=      1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=      5.00         1.18          4.58
     TOTAL RAINFALL   (mm)=      5.00         5.00          5.00
     RUNOFF COEFFICIENT   =      1.00         0.24          0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0377)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0361):     1.81   0.038     1.50     4.60
      + ID2= 2 (  0375):     0.16   0.004     1.50     4.58
        ==========================================================
        ID = 3 (  0377):     1.97   0.042     1.50     4.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0382)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
               0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
               0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
               0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
               0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
               0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
               0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
               0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
               0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
               0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
               1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
           over (min)            5.00        55.00
     Storage Coeff.  (min)=      6.78 (ii)   54.95 (ii)
     Unit Hyd. Tpeak (min)=      5.00        55.00
     Unit Hyd. peak  (cms)=      0.18         0.02
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.04         0.00          0.037 (iii)
     TIME TO PEAK    (hrs)=      1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=      5.00         1.18          4.60
     TOTAL RAINFALL   (mm)=      5.00         5.00          5.00
     RUNOFF COEFFICIENT   =      1.00         0.24          0.92

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0381)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0090    |   0.2700     0.0092
                          0.0010     0.0091    |   0.2710     0.0320

                                AREA     QPEAK     TPEAK        R.V.
                                (ha)     (cms)     (hrs)        (mm)
   INFLOW : ID= 2 (  0382)      1.813     0.037      1.50        4.60
   OUTFLOW: ID= 1 (  0381)      1.813     0.000      0.00        0.00

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                  TIME SHIFT OF PEAK FLOW          (min)=-90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0383)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
```

0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	0.82	
over (min)		5.00	55.00	
Storage Coeff. (min)=		3.27 (ii)	51.45 (ii)	
Unit Hyd. Tpeak (min)=		5.00	55.00	
Unit Hyd. peak (cms)=		0.27	0.02	
				TOTALS
PEAK FLOW	(cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK	(hrs)=	1.50	2.42	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	4.58
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm	Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB	
STANDHYD (0385)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	0.82	
over (min)		5.00	55.00	
Storage Coeff. (min)=		2.75 (ii)	50.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	55.00	
Unit Hyd. peak (cms)=		0.28	0.02	
				TOTALS
PEAK FLOW	(cms)=	0.00	0.00	0.001 (iii)
TIME TO PEAK	(hrs)=	1.50	2.42	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	1.83
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.37

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0381):	1.81	0.000	0.00	0.00
	+ ID2= 2 (0383):	0.16	0.004	1.50	4.58
	ID = 3 (0384):	1.97	0.004	1.50	0.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0384):	1.97	0.004	1.50	0.37
	+ ID2= 2 (0385):	0.09	0.001	1.50	1.83
	ID = 1 (0384):	2.06	0.005	1.50	0.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm	Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB	
STANDHYD (0341)	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)=	0.00	0.00
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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52

0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	2.03	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.27 (ii)	6.09 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	4.95
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.99

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppD
ata\Local\Temp\
614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0343) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.79	0.02
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	2.03	
over (min)		5.00	10.00	
Storage Coeff. (min)=		6.78 (ii)	9.60 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.18	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.00	0.041 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	4.96
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.99

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppD
ata\Local\Temp\
614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0380) | Area (ha)= 0.09
ID= 1 DT= 5.0 min | Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	0.82	
over (min)		5.00	55.00	
Storage Coeff. (min)=		2.75 (ii)	50.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	55.00	
Unit Hyd. peak (cms)=		0.28	0.02	
				TOTALS
PEAK FLOW	(cms)=	0.00	0.00	0.001 (iii)
TIME TO PEAK	(hrs)=	1.50	2.42	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	1.83
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.37

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0386)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0341):     0.16   0.004     1.50     4.95
     + ID2= 2 (  0343):     1.81   0.041     1.50     4.96
       ================================================
       ID = 3 (  0386):     1.97   0.045     1.50     4.96

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

```
--------------------
| ADD HYD  (  0386)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0386):     1.97   0.045     1.50     4.96
     + ID2= 2 (  0380):     0.09   0.001     1.50     1.83
       ================================================
       ID = 1 (  0386):     2.06   0.046     1.50     4.82

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

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
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```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

```
--------------------
| CALIB            |
| STANDHYD (  0388)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

```
     Max.Eff.Inten.(mm/hr)=      10.04          0.82
               over (min)        5.00         55.00
     Storage Coeff.  (min)=      3.27 (ii)    51.45 (ii)
     Unit Hyd. Tpeak (min)=      5.00         55.00
     Unit Hyd. peak  (cms)=      0.27          0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.00          0.00      0.004 (iii)
     TIME TO PEAK    (hrs)=      1.50          2.42        1.50
     RUNOFF VOLUME    (mm)=      5.00          1.18        4.58
     TOTAL RAINFALL   (mm)=      5.00          5.00        5.00
     RUNOFF COEFFICIENT   =      1.00          0.24        0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

```
--------------------
| CALIB            |
| STANDHYD (  0389)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63          0.18
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     109.94         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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

```
     Max.Eff.Inten.(mm/hr)=      10.04          0.82
               over (min)        5.00         55.00
     Storage Coeff.  (min)=      6.78 (ii)    54.95 (ii)
     Unit Hyd. Tpeak (min)=      5.00         55.00
     Unit Hyd. peak  (cms)=      0.18          0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.04          0.00        0.037 (iii)
     TIME TO PEAK    (hrs)=      1.50          2.42          1.50
     RUNOFF VOLUME    (mm)=      5.00          1.18          4.60
     TOTAL RAINFALL   (mm)=      5.00          5.00          5.00
     RUNOFF COEFFICIENT   =      1.00          0.24          0.92

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------
| RESERVOIR(  0387)|
```

IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0041	0.0395
0.0010	0.0091	0.2700	0.0395
0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.037	1.50	4.60
OUTFLOW: ID= 1 (0387)	1.813	0.000	0.00	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=-90.00
MAXIMUM STORAGE USED (ha.m.)= 0.0031

READ STORM
Ptotal= 5.00 mm

Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0391)
ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

				TOTALS
Max.Eff.Inten.(mm/hr)=		10.04	0.82	
over (min)		5.00	55.00	
Storage Coeff. (min)=		2.75 (ii)	50.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	55.00	
Unit Hyd. peak (cms)=		0.28	0.02	
PEAK FLOW	(cms)=	0.00	0.00	0.001 (iii)
TIME TO PEAK	(hrs)=	1.50	2.42	1.50
RUNOFF VOLUME	(mm)=	5.00	1.18	1.83
TOTAL RAINFALL	(mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT	=	1.00	0.24	0.37

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.000	0.00	0.00
+ ID2= 2 (0388):	0.16	0.004	1.50	4.58
ID = 3 (0390):	1.97	0.004	1.50	0.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.004	1.50	0.37
+ ID2= 2 (0391):	0.09	0.001	1.50	1.83
ID = 1 (0390):	2.06	0.005	1.50	0.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
Ptotal= 5.00 mm

Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0394)
ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

				TOTALS
Max.Eff.Inten.(mm/hr)=		10.04	0.82	
over (min)		5.00	55.00	
Storage Coeff. (min)=		2.75 (ii)	50.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	55.00	
Unit Hyd. peak (cms)=		0.28	0.02	

PEAK FLOW (cms)=	0.00	0.00	0.001 (iii)
TIME TO PEAK (hrs)=	1.50	2.42	1.50
RUNOFF VOLUME (mm)=	5.00	1.18	1.83
TOTAL RAINFALL (mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT =	1.00	0.24	0.37

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0395) | Area (ha)= 0.16
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	3.27 (ii)	51.45 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.27	0.02		
			TOTALS	
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)	
TIME TO PEAK (hrs)=	1.50	2.42	1.50	
RUNOFF VOLUME (mm)=	5.00	1.18	4.58	
TOTAL RAINFALL (mm)=	5.00	5.00	5.00	
RUNOFF COEFFICIENT =	1.00	0.24	0.92	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0396) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	6.78 (ii)	54.95 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.18	0.02		
			TOTALS	
PEAK FLOW (cms)=	0.04	0.00	0.037 (iii)	
TIME TO PEAK (hrs)=	1.50	2.42	1.50	
RUNOFF VOLUME (mm)=	5.00	1.18	4.60	
TOTAL RAINFALL (mm)=	5.00	5.00	5.00	
RUNOFF COEFFICIENT =	1.00	0.24	0.92	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0393)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0091	0.0347
0.0010	0.0091	0.2700	0.0348
0.0090	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0396)	1.813	0.037	1.50	4.60
OUTFLOW: ID= 1 (0393)	1.813	0.000	0.00	0.00

```
                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                TIME SHIFT OF PEAK FLOW         (min)=-90.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031
```

```
--------------------
| ADD HYD  (  0392)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0393):      1.81   0.000     0.00     0.00
     + ID2= 2 (  0394):      0.09   0.001     1.50     1.83
       ================================================
       ID = 3 (  0392):      1.90   0.001     1.50     0.09
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| ADD HYD  (  0392)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0392):      1.90   0.001     1.50     0.09
     + ID2= 2 (  0395):      0.16   0.004     1.50     4.58
       ================================================
       ID = 1 (  0392):      2.06   0.005     1.50     0.43
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

```
--------------------
| CALIB            |
| STANDHYD (  0397)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=		10.04	0.82
over (min)		5.00	55.00
Storage Coeff. (min)=		6.78 (ii)	54.95 (ii)
Unit Hyd. Tpeak (min)=		5.00	55.00
Unit Hyd. peak (cms)=		0.18	0.02
			TOTALS
PEAK FLOW	(cms)=	0.04	0.00 0.037 (iii)
TIME TO PEAK	(hrs)=	1.50	2.42 1.50
RUNOFF VOLUME	(mm)=	5.00	1.18 4.60
TOTAL RAINFALL	(mm)=	5.00	5.00 5.00
RUNOFF COEFFICIENT	=	1.00	0.24 0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| RESERVOIR(  0399)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0090    |   0.0211     0.0273
                         0.0010     0.0091    |   0.2700     0.0274
                         0.0210     0.0092    |   0.2710     0.0474
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0397)	1.813	0.037	1.50	4.60
OUTFLOW: ID= 1 (0399)	1.813	0.000	0.00	0.00

```
                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                TIME SHIFT OF PEAK FLOW         (min)=-90.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031
```

```
--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

```
--------------------
| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

```
     Max.Eff.Inten.(mm/hr)=      10.04          0.82
               over (min)         5.00         55.00
     Storage Coeff.  (min)=      3.27 (ii)    51.45 (ii)
     Unit Hyd. Tpeak (min)=      5.00         55.00
     Unit Hyd. peak  (cms)=      0.27          0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.00          0.00      0.004 (iii)
     TIME TO PEAK    (hrs)=      1.50          2.42        1.50
     RUNOFF VOLUME    (mm)=      5.00          1.18        4.58
     TOTAL RAINFALL   (mm)=      5.00          5.00        5.00
     RUNOFF COEFFICIENT   =      1.00          0.24        0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.41 |  1.17    1.14 |'  2.17    1.04 |  3.17    0.56
                0.33    0.45 |  1.33    2.16 |'  2.33    0.89 |  3.33    0.52
                0.50    0.50 |  1.50   10.04 |'  2.50    0.79 |  3.50    0.50
                0.67    0.58 |  1.67    2.67 |'  2.67    0.71 |  3.67    0.47
                0.83    0.68 |  1.83    1.66 |'  2.83    0.65 |  3.83    0.45
                1.00    0.84 |  2.00    1.26 |'  3.00    0.60 |  4.00    0.43

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

--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03          0.06
     Dep. Storage     (mm)=      0.00          0.00
     Average Slope     (%)=      1.00          2.00
     Length            (m)=     24.49         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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
               0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
               0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
               0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
               0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
               0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
               0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
               0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
               0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
               0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
               1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04          0.82
               over (min)         5.00         55.00
     Storage Coeff.  (min)=      2.75 (ii)    50.93 (ii)
     Unit Hyd. Tpeak (min)=      5.00         55.00
     Unit Hyd. peak  (cms)=      0.28          0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.00          0.00      0.001 (iii)
     TIME TO PEAK    (hrs)=      1.50          2.42        1.50
     RUNOFF VOLUME    (mm)=      5.00          1.18        1.83
     TOTAL RAINFALL   (mm)=      5.00          5.00        5.00
     RUNOFF COEFFICIENT   =      1.00          0.24        0.37

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0398):      0.16   0.004     1.50     4.58
     + ID2= 2 (  0399):      1.81   0.000     0.00     0.00
       ==========================================================
       ID = 3 (  0401):      1.97   0.004     1.50     0.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0401):      1.97   0.004     1.50     0.37
     + ID2= 2 (  0400):      0.09   0.001     1.50     1.83
       ==========================================================
       ID = 1 (  0401):      2.06   0.005     1.50     0.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.41 |  1.17    1.14 |'  2.17    1.04 |  3.17    0.56
                0.33    0.45 |  1.33    2.16 |'  2.33    0.89 |  3.33    0.52
                0.50    0.50 |  1.50   10.04 |'  2.50    0.79 |  3.50    0.50
                0.67    0.58 |  1.67    2.67 |'  2.67    0.71 |  3.67    0.47
                0.83    0.68 |  1.83    1.66 |'  2.83    0.65 |  3.83    0.45
                1.00    0.84 |  2.00    1.26 |'  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0402)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03          0.06
     Dep. Storage     (mm)=      0.00          0.00
     Average Slope     (%)=      1.00          2.00
     Length            (m)=     24.49         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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
               0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
               0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
               0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
               0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
               0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
               0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
               0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
               0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
               0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
               1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04          0.82
               over (min)         5.00         55.00
```

```
     Storage Coeff.  (min)=       2.75 (ii)   50.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00        55.00
     Unit Hyd. peak  (cms)=       0.28         0.02
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.00          0.001 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=       5.00         1.18          1.83
     TOTAL RAINFALL   (mm)=       5.00         5.00          5.00
     RUNOFF COEFFICIENT   =       1.00         0.24          0.37

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |'  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |'  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |'  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |'  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |'  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |'  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0404)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
               0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
               0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
               0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
               0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
               0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
               0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
               0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
               0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
               0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
               1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
               over (min)        5.00        55.00
     Storage Coeff.  (min)=       3.27 (ii)   51.45 (ii)
     Unit Hyd. Tpeak (min)=       5.00        55.00
     Unit Hyd. peak  (cms)=       0.27         0.02
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.00          0.004 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=       5.00         1.18          4.58
     TOTAL RAINFALL   (mm)=       5.00         5.00          5.00
     RUNOFF COEFFICIENT   =       1.00         0.24          0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |'  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |'  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |'  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |'  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |'  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |'  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n             =    0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
               0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
               0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
               0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
               0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
               0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
               0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
               0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
               0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
               0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
               0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
               1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
               over (min)        5.00        55.00
     Storage Coeff.  (min)=       6.78 (ii)   54.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        55.00
     Unit Hyd. peak  (cms)=       0.18         0.02
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.00          0.037 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=       5.00         1.18          4.60
     TOTAL RAINFALL   (mm)=       5.00         5.00          5.00
     RUNOFF COEFFICIENT   =       1.00         0.24          0.92


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0090    |  0.0051     0.0130
                         0.0010     0.0091    |  0.2700     0.0131
                         0.0050     0.0092    |  0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
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```
                              (ha)      (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)      1.813     0.037      1.50       4.60
   OUTFLOW: ID= 1 (  0405)      1.813     0.000      0.00       0.00

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                  TIME SHIFT OF PEAK FLOW          (min)=-90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031
```

ADD HYD (0403)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0402):	0.09	0.001	1.50	1.83
	+ ID2= 2 (0404):	0.16	0.004	1.50	4.58
	ID = 3 (0403):	0.25	0.005	1.50	3.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0403)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0403):	0.25	0.005	1.50	3.59
	+ ID2= 2 (0405):	1.81	0.000	0.00	0.00
	ID = 1 (0403):	2.06	0.005	1.50	0.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm	Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB	
STANDHYD (0407)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

				TOTALS
Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	2.75 (ii)	50.93 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.28	0.02		
PEAK FLOW (cms)=	0.00	0.00		0.001 (iii)
TIME TO PEAK (hrs)=	1.50	2.42		1.50
RUNOFF VOLUME (mm)=	5.00	1.18		1.83
TOTAL RAINFALL (mm)=	5.00	5.00		5.00
RUNOFF COEFFICIENT =	1.00	0.24		0.37

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm	Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB	
STANDHYD (0410)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

				TOTALS
Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	6.78 (ii)	54.95 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.18	0.02		
PEAK FLOW (cms)=	0.04	0.00		0.037 (iii)
TIME TO PEAK (hrs)=	1.50	2.42		1.50
RUNOFF VOLUME (mm)=	5.00	1.18		4.60
TOTAL RAINFALL (mm)=	5.00	5.00		5.00
RUNOFF COEFFICIENT =	1.00	0.24		0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

```
        CN*  =  94.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0408)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0022     0.0151
                          0.0010     0.0091   |   0.2700     0.0152
                          0.0021     0.0092   |   0.2710     0.0376

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0410)     1.813     0.037      1.50       4.60
   OUTFLOW: ID= 1 (  0408)     1.813     0.000      0.00       0.00

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                  TIME SHIFT OF PEAK FLOW          (min)=-90.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0411)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
              0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
              0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
              0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
              0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
              0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
              0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
              0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
              0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
              0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
              0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
              1.000    0.84 | 2.000    1.26 | 3.000    0.60 |  4.00    0.43

     Max.Eff.Inten.(mm/hr)=      10.04         0.82
               over (min)         5.00        55.00
     Storage Coeff.  (min)=      3.27 (ii)   51.45 (ii)
     Unit Hyd. Tpeak (min)=      5.00        55.00
     Unit Hyd. peak  (cms)=      0.27         0.02
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.00        0.004 (iii)
     TIME TO PEAK    (hrs)=      1.50         2.42          1.50
     RUNOFF VOLUME    (mm)=      5.00         1.18          4.58
     TOTAL RAINFALL   (mm)=      5.00         5.00          5.00

     RUNOFF COEFFICIENT   =      1.00         0.24          0.92

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.001     1.50     1.83
     + ID2= 2 (  0408):     1.81   0.000     0.00     0.00
       ==========================================================
       ID = 3 (  0409):     1.90   0.001     1.50     0.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.001     1.50     0.09
     + ID2= 2 (  0411):     0.16   0.004     1.50     4.58
       ==========================================================
       ID = 1 (  0409):     2.06   0.005     1.50     0.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
| Ptotal=  5.00 mm |    Comments: 5 mm, 4-hour Chicago
--------------------
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.41 |  1.17    1.14 |  2.17    1.04 |  3.17    0.56
               0.33    0.45 |  1.33    2.16 |  2.33    0.89 |  3.33    0.52
               0.50    0.50 |  1.50   10.04 |  2.50    0.79 |  3.50    0.50
               0.67    0.58 |  1.67    2.67 |  2.67    0.71 |  3.67    0.47
               0.83    0.68 |  1.83    1.66 |  2.83    0.65 |  3.83    0.45
               1.00    0.84 |  2.00    1.26 |  3.00    0.60 |  4.00    0.43

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--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.41 | 1.083    1.14 | 2.083    1.04 |  3.08    0.56
              0.167    0.41 | 1.167    1.14 | 2.167    1.04 |  3.17    0.56
              0.250    0.45 | 1.250    2.16 | 2.250    0.89 |  3.25    0.52
              0.333    0.45 | 1.333    2.16 | 2.333    0.89 |  3.33    0.52
              0.417    0.50 | 1.417   10.04 | 2.417    0.79 |  3.42    0.50
              0.500    0.50 | 1.500   10.04 | 2.500    0.79 |  3.50    0.50
              0.583    0.58 | 1.583    2.67 | 2.583    0.71 |  3.58    0.47
              0.667    0.58 | 1.667    2.67 | 2.667    0.71 |  3.67    0.47
              0.750    0.68 | 1.750    1.66 | 2.750    0.65 |  3.75    0.45
              0.833    0.68 | 1.833    1.66 | 2.833    0.65 |  3.83    0.45
              0.917    0.83 | 1.917    1.26 | 2.917    0.60 |  3.92    0.43
```

1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=	10.04	0.82	
over (min)	5.00	55.00	
Storage Coeff. (min)=	3.27 (ii)	51.45 (ii)	
Unit Hyd. Tpeak (min)=	5.00	55.00	
Unit Hyd. peak (cms)=	0.27	0.02	
			TOTALS
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	1.50	2.42	1.50
RUNOFF VOLUME (mm)=	5.00	1.18	4.58
TOTAL RAINFALL (mm)=	5.00	5.00	5.00
RUNOFF COEFFICIENT =	1.00	0.24	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0420) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	6.78 (ii)	54.95 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.18	0.02		
				TOTALS
PEAK FLOW (cms)=	0.04	0.00		0.037 (iii)
TIME TO PEAK (hrs)=	1.50	2.42		1.50
RUNOFF VOLUME (mm)=	5.00	1.18		4.60
TOTAL RAINFALL (mm)=	5.00	5.00		5.00
RUNOFF COEFFICIENT =	1.00	0.24		0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0417) | IN= 2---> OUT= 1 | DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0012	0.0160
0.0010	0.0091	0.2700	0.0161
0.0011	0.0092	0.2710	0.0387

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0420)	1.813	0.037	1.50	4.60
OUTFLOW: ID= 1 (0417)	1.813	0.000	0.00	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=-90.00
MAXIMUM STORAGE USED (ha.m.)= 0.0031

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\2cd0ac00
Ptotal= 5.00 mm | Comments: 5 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.41	1.17	1.14	2.17	1.04	3.17	0.56
0.33	0.45	1.33	2.16	2.33	0.89	3.33	0.52
0.50	0.50	1.50	10.04	2.50	0.79	3.50	0.50
0.67	0.58	1.67	2.67	2.67	0.71	3.67	0.47
0.83	0.68	1.83	1.66	2.83	0.65	3.83	0.45
1.00	0.84	2.00	1.26	3.00	0.60	4.00	0.43

CALIB
STANDHYD (0421) | Area (ha)= 0.09
ID= 1 DT= 5.0 min | Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.41	1.083	1.14	2.083	1.04	3.08	0.56
0.167	0.41	1.167	1.14	2.167	1.04	3.17	0.56
0.250	0.45	1.250	2.16	2.250	0.89	3.25	0.52
0.333	0.45	1.333	2.16	2.333	0.89	3.33	0.52
0.417	0.50	1.417	10.04	2.417	0.79	3.42	0.50
0.500	0.50	1.500	10.04	2.500	0.79	3.50	0.50
0.583	0.58	1.583	2.67	2.583	0.71	3.58	0.47
0.667	0.58	1.667	2.67	2.667	0.71	3.67	0.47
0.750	0.68	1.750	1.66	2.750	0.65	3.75	0.45
0.833	0.68	1.833	1.66	2.833	0.65	3.83	0.45
0.917	0.83	1.917	1.26	2.917	0.60	3.92	0.43
1.000	0.84	2.000	1.26	3.000	0.60	4.00	0.43

Max.Eff.Inten.(mm/hr)=	10.04	0.82		
over (min)	5.00	55.00		
Storage Coeff. (min)=	2.75 (ii)	50.93 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.28	0.02		
				TOTALS
PEAK FLOW (cms)=	0.00	0.00		0.001 (iii)
TIME TO PEAK (hrs)=	1.50	2.42		1.50

```
     RUNOFF VOLUME    (mm)=       5.00         1.18           1.83
     TOTAL RAINFALL   (mm)=       5.00         5.00           5.00
     RUNOFF COEFFICIENT   =       1.00         0.24           0.37

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0417):     1.81   0.000     0.00     0.00
     + ID2= 2 (  0419):     0.16   0.004     1.50     4.58
       ================================================
       ID = 3 (  0418):     1.97   0.004     1.50     0.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0418):     1.97   0.004     1.50     0.37
     + ID2= 2 (  0421):     0.09   0.001     1.50     1.83
       ================================================
       ID = 1 (  0418):     2.06   0.005     1.50     0.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

       V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
  Output  filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\3bd3836a-f
  Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\3bd3836a-f


DATE: 02-13-2019                          TIME: 09:45:48

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 2__10 mm                      **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0358)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n            =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        35.00
     Storage Coeff.  (min)=      5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=      5.00        35.00
     Unit Hyd. peak  (cms)=      0.21         0.03
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.08         0.00       0.081 (iii)
     TIME TO PEAK    (hrs)=      1.50         2.00        1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81        9.37
     TOTAL RAINFALL   (mm)=     10.00        10.00       10.00
     RUNOFF COEFFICIENT   =      1.00         0.38        0.94


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0361)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.3120     0.0220
                         0.3110     0.0010    |  0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0358)     1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0361)     1.813     0.083      1.50       9.37

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.82
                  TIME SHIFT OF PEAK FLOW          (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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--------------------
| CALIB            |
| STANDHYD (  0375)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
```

```
              0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
              0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
              0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
              0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
              0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
              0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
              0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
              1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
           over (min)            5.00        30.00
     Storage Coeff.  (min)=      2.48 (ii)   28.82 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.29         0.04
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.00          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.92          1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81          9.33
     TOTAL RAINFALL   (mm)=     10.00        10.00         10.00
     RUNOFF COEFFICIENT   =      1.00         0.38          0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0377)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
        ID1= 1 (  0361):     1.81   0.083     1.50     9.37
      + ID2= 2 (  0375):     0.16   0.008     1.50     9.33
        ================================================
        ID = 3 (  0377):     1.97   0.091     1.50     9.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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--------------------
| CALIB            |
| STANDHYD (  0382)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
           over (min)            5.00        35.00
     Storage Coeff.  (min)=      5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=      5.00        35.00
     Unit Hyd. peak  (cms)=      0.21         0.03
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.08         0.00          0.081 (iii)
     TIME TO PEAK    (hrs)=      1.50         2.00          1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81          9.37
     TOTAL RAINFALL   (mm)=     10.00        10.00         10.00
     RUNOFF COEFFICIENT   =      1.00         0.38          0.94

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| RESERVOIR(  0381)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0090    |   0.2700     0.0092
                          0.0010     0.0091    |   0.2710     0.0320

                                AREA     QPEAK     TPEAK        R.V.
                                (ha)     (cms)     (hrs)        (mm)
   INFLOW : ID= 2 (  0382)      1.813     0.081      1.50        9.37
   OUTFLOW: ID= 1 (  0381)      1.813     0.058      1.65        4.39

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 72.01
                  TIME SHIFT OF PEAK FLOW          (min)=  9.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0071

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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--------------------
| CALIB            |
| STANDHYD (  0383)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
```

0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=	20.09	3.72	
over (min)	5.00	30.00	
Storage Coeff. (min)=	2.48 (ii)	28.82 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.29	0.04	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	1.50	1.92	1.50
RUNOFF VOLUME (mm)=	10.00	3.81	9.33
TOTAL RAINFALL (mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT =	1.00	0.38	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm | Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB
STANDHYD (0385) | Area (ha)= 0.09
ID= 1 DT= 5.0 min | Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=	20.09	3.72	
over (min)	5.00	30.00	
Storage Coeff. (min)=	2.09 (ii)	28.43 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.31	0.04	
			TOTALS
PEAK FLOW (cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK (hrs)=	1.50	1.92	1.50
RUNOFF VOLUME (mm)=	10.00	3.81	5.39
TOTAL RAINFALL (mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT =	1.00	0.38	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0384)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0381):	1.81	0.058	1.65	4.39
+ ID2= 2 (0383):	0.16	0.008	1.50	9.33
ID = 3 (0384):	1.97	0.061	1.65	4.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0384)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0384):	1.97	0.061	1.65	4.79
+ ID2= 2 (0385):	0.09	0.002	1.50	5.39
ID = 1 (0384):	2.06	0.061	1.65	4.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm | Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB
STANDHYD (0341) | 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)=	0.00	0.00
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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05

0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=		20.09	6.98	
	over (min)	5.00	5.00	
Storage Coeff. (min)=		2.48 (ii)	4.62 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.29	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK	(hrs)=	1.50	1.50	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.93
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.99

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppD ata\Local\Temp\ 614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm	Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB	
STANDHYD (0343)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.79	0.02
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=		20.09	6.98	
	over (min)	5.00	10.00	
Storage Coeff. (min)=		5.14 (ii)	7.27 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.21	0.14	

				TOTALS
PEAK FLOW	(cms)=	0.09	0.00	0.089 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.93
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.99

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppD ata\Local\Temp\ 614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm	Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB	
STANDHYD (0380)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=		20.09	3.72	
	over (min)	5.00	30.00	
Storage Coeff. (min)=		2.09 (ii)	28.43 (ii)	
Unit Hyd. Tpeak (min)=		5.00	30.00	
Unit Hyd. peak (cms)=		0.31	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK	(hrs)=	1.50	1.92	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	5.39
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0341):	0.16	0.009	1.50	9.93
+ ID2= 2 (0343):	1.81	0.089	1.50	9.93
ID = 3 (0386):	1.97	0.098	1.50	9.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0386):	1.97	0.098	1.50	9.93
+ ID2= 2 (0380):	0.09	0.002	1.50	5.39
ID = 1 (0386):	2.06	0.099	1.50	9.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm	Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB STANDHYD (0388)	Area (ha)= 0.16
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

				TOTALS
Max.Eff.Inten.(mm/hr)=		20.09	3.72	
over (min)		5.00	30.00	
Storage Coeff. (min)=		2.48 (ii)	28.82 (ii)	
Unit Hyd. Tpeak (min)=		5.00	30.00	
Unit Hyd. peak (cms)=		0.29	0.04	
PEAK FLOW	(cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK	(hrs)=	1.50	1.92	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.33
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm	Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB STANDHYD (0389)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

				TOTALS
Max.Eff.Inten.(mm/hr)=		20.09	3.72	
over (min)		5.00	35.00	
Storage Coeff. (min)=		5.14 (ii)	31.48 (ii)	
Unit Hyd. Tpeak (min)=		5.00	35.00	
Unit Hyd. peak (cms)=		0.21	0.03	
PEAK FLOW	(cms)=	0.08	0.00	0.081 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.37
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.94

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR (0387)

```
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0090    |  0.0041      0.0395
                         0.0010     0.0091    |  0.2700      0.0395
                         0.0040     0.0092    |  0.2710      0.0538

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0389)      1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0387)      1.813     0.004      4.00       4.39

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.96
                  TIME SHIFT OF PEAK FLOW         (min)=150.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0111
```

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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85
```

```
--------------------
| CALIB            |
| STANDHYD (  0391)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        30.00
     Storage Coeff.  (min)=      2.09 (ii)   28.43 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.31         0.04
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.00      0.002 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.92      1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81      5.39
     TOTAL RAINFALL   (mm)=     10.00        10.00     10.00
     RUNOFF COEFFICIENT   =      1.00         0.38      0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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  (  0390)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK      R.V.
--------------------         (ha)    (cms)    (hrs)      (mm)
       ID1= 1 (  0387):     1.81   0.004     4.00      4.39
     + ID2= 2 (  0388):     0.16   0.008     1.50      9.33
       ================================================
       ID = 3 (  0390):     1.97   0.008     1.50      4.79

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

```
--------------------
| ADD HYD  (  0390)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK      R.V.
--------------------         (ha)    (cms)    (hrs)      (mm)
       ID1= 3 (  0390):     1.97   0.008     1.50      4.79
     + ID2= 2 (  0391):     0.09   0.002     1.50      5.39
       ================================================
       ID = 1 (  0390):     2.06   0.010     1.50      4.81

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

```
--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85
```

```
--------------------
| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        30.00
     Storage Coeff.  (min)=      2.09 (ii)   28.43 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.31         0.04
                                                    *TOTALS*
```

```
     PEAK FLOW       (cms)=       0.00          0.00          0.002 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.92           1.50
     RUNOFF VOLUME    (mm)=      10.00          3.81           5.39
     TOTAL RAINFALL   (mm)=      10.00         10.00          10.00
     RUNOFF COEFFICIENT   =       1.00          0.38           0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09          3.72
               over (min)        5.00         30.00
     Storage Coeff.  (min)=       2.48 (ii)   28.82 (ii)
     Unit Hyd. Tpeak (min)=       5.00         30.00
     Unit Hyd. peak  (cms)=       0.29          0.04
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01          0.00           0.008 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.92           1.50
     RUNOFF VOLUME    (mm)=      10.00          3.81           9.33
     TOTAL RAINFALL   (mm)=      10.00         10.00          10.00
     RUNOFF COEFFICIENT   =       1.00          0.38           0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63          0.18
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     109.94         40.00
     Mannings n            =      0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09          3.72
               over (min)        5.00         35.00
     Storage Coeff.  (min)=       5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00         35.00
     Unit Hyd. peak  (cms)=       0.21          0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.08          0.00           0.081 (iii)
     TIME TO PEAK    (hrs)=       1.50          2.00           1.50
     RUNOFF VOLUME    (mm)=      10.00          3.81           9.37
     TOTAL RAINFALL   (mm)=      10.00         10.00          10.00
     RUNOFF COEFFICIENT   =       1.00          0.38           0.94


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| RESERVOIR(  0393)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)     |   (cms)     (ha.m.)
                          0.0000     0.0090     |   0.0091     0.0347
                          0.0010     0.0091     |   0.2700     0.0348
                          0.0090     0.0092     |   0.2710     0.0538

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0396)         1.813     0.081      1.50        9.37
   OUTFLOW: ID= 1 (  0393)         1.813     0.009      2.35        4.39
```

```
                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.14
                TIME SHIFT OF PEAK FLOW          (min)= 51.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0087
```

```
--------------------
| ADD HYD  (  0392)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0393):      1.81   0.009     2.35     4.39
     + ID2= 2 (  0394):      0.09   0.002     1.50     5.39
       ================================================
       ID = 3 (  0392):      1.90   0.010     1.65     4.44
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| ADD HYD  (  0392)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0392):      1.90   0.010     1.65     4.44
     + ID2= 2 (  0395):      0.16   0.008     1.50     9.33
       ================================================
       ID = 1 (  0392):      2.06   0.012     1.65     4.82
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

```
--------------------
| CALIB            |
| STANDHYD (  0397)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

```
     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        35.00
     Storage Coeff.  (min)=       5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.21         0.03
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.00          0.081 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00           1.50
     RUNOFF VOLUME    (mm)=      10.00         3.81           9.37
     TOTAL RAINFALL   (mm)=      10.00        10.00          10.00
     RUNOFF COEFFICIENT   =       1.00         0.38           0.94

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| RESERVOIR(  0399)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000      0.0090   |   0.0211      0.0273
                         0.0010      0.0091   |   0.2700      0.0274
                         0.0210      0.0092   |   0.2710      0.0474

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0397)       1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0399)       1.813     0.021      1.78       4.39

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 25.97
                TIME SHIFT OF PEAK FLOW          (min)= 17.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0072
```

```
--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

```
--------------------
| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

```
     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        30.00
     Storage Coeff.  (min)=      2.48 (ii)   28.82 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.29         0.04
                                                  *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.00          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.92          1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81          9.33
     TOTAL RAINFALL   (mm)=     10.00        10.00         10.00
     RUNOFF COEFFICIENT   =      1.00         0.38          0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |'  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |'  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |'  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |'  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |'  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |'  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        30.00
     Storage Coeff.  (min)=      2.09 (ii)   28.43 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.31         0.04
                                                  *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.00          0.002 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.92          1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81          5.39
     TOTAL RAINFALL   (mm)=     10.00        10.00         10.00
     RUNOFF COEFFICIENT   =      1.00         0.38          0.54

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0398):      0.16   0.008     1.50     9.33
     + ID2= 2 (  0399):      1.81   0.021     1.78     4.39
       ==========================================================
       ID = 3 (  0401):      1.97   0.023     1.65     4.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0401):      1.97   0.023     1.65     4.79
     + ID2= 2 (  0400):      0.09   0.002     1.50     5.39
       ==========================================================
       ID = 1 (  0401):      2.06   0.024     1.65     4.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |'  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |'  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |'  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |'  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |'  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |'  3.00    1.20 |  4.00    0.85

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--------------------
| CALIB            |
| STANDHYD (  0402)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        30.00
```

Storage Coeff. (min)=	2.09 (ii)	28.43 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.31	0.04	
			TOTALS
PEAK FLOW (cms)=	0.00	0.00	0.002 (iii)
TIME TO PEAK (hrs)=	1.50	1.92	1.50
RUNOFF VOLUME (mm)=	10.00	3.81	5.39
TOTAL RAINFALL (mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT =	1.00	0.38	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm | Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB STANDHYD (0404) | Area (ha)= 0.16
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=		20.09	3.72	
over (min)		5.00	30.00	
Storage Coeff. (min)=		2.48 (ii)	28.82 (ii)	
Unit Hyd. Tpeak (min)=		5.00	30.00	
Unit Hyd. peak (cms)=		0.29	0.04	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK	(hrs)=	1.50	1.92	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.33
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
Ptotal= 10.00 mm | Comments: 10 mm, 4-hour Chicago

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

CALIB STANDHYD (0406) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

Max.Eff.Inten.(mm/hr)=		20.09	3.72	
over (min)		5.00	35.00	
Storage Coeff. (min)=		5.14 (ii)	31.48 (ii)	
Unit Hyd. Tpeak (min)=		5.00	35.00	
Unit Hyd. peak (cms)=		0.21	0.03	
				TOTALS
PEAK FLOW	(cms)=	0.08	0.00	0.081 (iii)
TIME TO PEAK	(hrs)=	1.50	2.00	1.50
RUNOFF VOLUME	(mm)=	10.00	3.81	9.37
TOTAL RAINFALL	(mm)=	10.00	10.00	10.00
RUNOFF COEFFICIENT	=	1.00	0.38	0.94

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0405)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0051	0.0130
0.0010	0.0091	0.2700	0.0131
0.0050	0.0092	0.2710	0.0356

AREA	QPEAK	TPEAK	R.V.

```
                              (ha)      (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)      1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0405)      1.813     0.005      3.40       4.39

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.29
                  TIME SHIFT OF PEAK FLOW          (min)=114.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0103
```

```
--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.002     1.50     5.39
     + ID2= 2 (  0404):     0.16   0.008     1.50     9.33
       ==========================================================
       ID = 3 (  0403):     0.25   0.010     1.50     7.91

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

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--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.010     1.50     7.91
     + ID2= 2 (  0405):     1.81   0.005     3.40     4.39
       ==========================================================
       ID = 1 (  0403):     2.06   0.010     1.50     4.82

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

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

```
--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

```
     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        30.00
     Storage Coeff.  (min)=       2.09 (ii)   28.43 (ii)
     Unit Hyd. Tpeak (min)=       5.00        30.00
     Unit Hyd. peak  (cms)=       0.31         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.00      0.002 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.92       1.50
     RUNOFF VOLUME    (mm)=      10.00         3.81       5.39
     TOTAL RAINFALL   (mm)=      10.00        10.00      10.00
     RUNOFF COEFFICIENT   =       1.00         0.38       0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. 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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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.83	1.17	2.28	2.17	2.08	3.17	1.12
0.33	0.91	1.33	4.31	2.33	1.79	3.33	1.05
0.50	1.01	1.50	20.09	2.50	1.58	3.50	0.99
0.67	1.15	1.67	5.35	2.67	1.42	3.67	0.94
0.83	1.35	1.83	3.31	2.83	1.30	3.83	0.89
1.00	1.67	2.00	2.52	3.00	1.20	4.00	0.85

```
--------------------
| CALIB            |
| STANDHYD (  0410)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        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	0.83	1.083	2.28	2.083	2.08	3.08	1.12
0.167	0.83	1.167	2.28	2.167	2.08	3.17	1.12
0.250	0.91	1.250	4.31	2.250	1.79	3.25	1.05
0.333	0.91	1.333	4.31	2.333	1.79	3.33	1.05
0.417	1.01	1.417	20.09	2.417	1.58	3.42	0.99
0.500	1.01	1.500	20.09	2.500	1.58	3.50	0.99
0.583	1.15	1.583	5.35	2.583	1.42	3.58	0.94
0.667	1.15	1.667	5.35	2.667	1.42	3.67	0.94
0.750	1.35	1.750	3.31	2.750	1.30	3.75	0.89
0.833	1.35	1.833	3.31	2.833	1.30	3.83	0.89
0.917	1.67	1.917	2.52	2.917	1.20	3.92	0.85
1.000	1.67	2.000	2.52	3.000	1.20	4.00	0.85

```
     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)         5.00        35.00
     Storage Coeff.  (min)=       5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.21         0.03
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.00      0.081 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00       1.50
     RUNOFF VOLUME    (mm)=      10.00         3.81       9.37
     TOTAL RAINFALL   (mm)=      10.00        10.00      10.00
     RUNOFF COEFFICIENT   =       1.00         0.38       0.94

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
       CN*  =  94.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0408)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |  0.0022      0.0151
                          0.0010     0.0091   |  0.2700      0.0152
                          0.0021     0.0092   |  0.2710      0.0376

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0410)     1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0408)     1.813     0.002      4.07       4.39

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.72
                 TIME SHIFT OF PEAK FLOW          (min)=154.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0127

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0411)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
              0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
              0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
              0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
              0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
              0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
              0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
              0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
              0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
              0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
              0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
              1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        30.00
     Storage Coeff.  (min)=      2.48 (ii)   28.82 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.29         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.00          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.92           1.50
     RUNOFF VOLUME    (mm)=     10.00         3.81           9.33
     TOTAL RAINFALL   (mm)=     10.00        10.00          10.00

     RUNOFF COEFFICIENT   =       1.00         0.38           0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.002     1.50     5.39
     + ID2= 2 (  0408):     1.81   0.002     4.07     4.39
       ==========================================================
       ID = 3 (  0409):     1.90   0.003     1.83     4.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.003     1.83     4.44
     + ID2= 2 (  0411):     0.16   0.008     1.50     9.33
       ==========================================================
       ID = 1 (  0409):     2.06   0.010     1.50     4.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
               0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
               0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
               0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
               0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
               1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
              0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
              0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
              0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
              0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
              0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
              0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
              0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
              0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
              0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
              0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
```

```
            1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        30.00
     Storage Coeff.  (min)=       2.48 (ii)   28.82 (ii)
     Unit Hyd. Tpeak (min)=       5.00        30.00
     Unit Hyd. peak  (cms)=       0.29         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.00          0.008 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.92           1.50
     RUNOFF VOLUME    (mm)=      10.00         3.81           9.33
     TOTAL RAINFALL   (mm)=      10.00        10.00          10.00
     RUNOFF COEFFICIENT   =       1.00         0.38           0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        35.00
     Storage Coeff.  (min)=       5.14 (ii)   31.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.21         0.03
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.00          0.081 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00           1.50
     RUNOFF VOLUME    (mm)=      10.00         3.81           9.37
     TOTAL RAINFALL   (mm)=      10.00        10.00          10.00
     RUNOFF COEFFICIENT   =       1.00         0.38           0.94

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0090    |   0.0012     0.0160
                         0.0010     0.0091    |   0.2700     0.0161
                         0.0011     0.0092    |   0.2710     0.0387

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)      1.813     0.081      1.50       9.37
   OUTFLOW: ID= 1 (  0417)      1.813     0.001      4.13       4.39

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.48
                  TIME SHIFT OF PEAK FLOW         (min)=158.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0135

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

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\6dc86968
| Ptotal= 10.00 mm |    Comments: 10 mm, 4-hour Chicago
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.83 |  1.17    2.28 |  2.17    2.08 |  3.17    1.12
                0.33    0.91 |  1.33    4.31 |  2.33    1.79 |  3.33    1.05
                0.50    1.01 |  1.50   20.09 |  2.50    1.58 |  3.50    0.99
                0.67    1.15 |  1.67    5.35 |  2.67    1.42 |  3.67    0.94
                0.83    1.35 |  1.83    3.31 |  2.83    1.30 |  3.83    0.89
                1.00    1.67 |  2.00    2.52 |  3.00    1.20 |  4.00    0.85

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

--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    0.83 | 1.083    2.28 | 2.083    2.08 |  3.08    1.12
               0.167    0.83 | 1.167    2.28 | 2.167    2.08 |  3.17    1.12
               0.250    0.91 | 1.250    4.31 | 2.250    1.79 |  3.25    1.05
               0.333    0.91 | 1.333    4.31 | 2.333    1.79 |  3.33    1.05
               0.417    1.01 | 1.417   20.09 | 2.417    1.58 |  3.42    0.99
               0.500    1.01 | 1.500   20.09 | 2.500    1.58 |  3.50    0.99
               0.583    1.15 | 1.583    5.35 | 2.583    1.42 |  3.58    0.94
               0.667    1.15 | 1.667    5.35 | 2.667    1.42 |  3.67    0.94
               0.750    1.35 | 1.750    3.31 | 2.750    1.30 |  3.75    0.89
               0.833    1.35 | 1.833    3.31 | 2.833    1.30 |  3.83    0.89
               0.917    1.67 | 1.917    2.52 | 2.917    1.20 |  3.92    0.85
               1.000    1.67 | 2.000    2.52 | 3.000    1.20 |  4.00    0.85

     Max.Eff.Inten.(mm/hr)=      20.09         3.72
               over (min)        5.00        30.00
     Storage Coeff.  (min)=       2.09 (ii)   28.43 (ii)
     Unit Hyd. Tpeak (min)=       5.00        30.00
     Unit Hyd. peak  (cms)=       0.31         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.00          0.002 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.92           1.50
```

```
     RUNOFF VOLUME    (mm)=      10.00         3.81          5.39
     TOTAL RAINFALL   (mm)=      10.00        10.00         10.00
     RUNOFF COEFFICIENT   =       1.00         0.38          0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0417):     1.81   0.001     4.13     4.39
     + ID2= 2 (  0419):     0.16   0.008     1.50     9.33
       ================================================
       ID = 3 (  0418):     1.97   0.008     1.50     4.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0418):     1.97   0.008     1.50     4.79
     + ID2= 2 (  0421):     0.09   0.002     1.50     5.39
       ================================================
       ID = 1 (  0418):     2.06   0.010     1.50     4.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
  Output  filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\1b521a93-3
  Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\1b521a93-3


DATE: 02-13-2019                          TIME: 09:45:48

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 4__25 mm                      **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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

--------------------
| CALIB            |
| STANDHYD (  0358)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        30.21
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      3.56 (ii)    7.42 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.26         0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.22         0.01       0.226 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.58        1.50
     RUNOFF VOLUME    (mm)=     25.00        15.16       24.01
     TOTAL RAINFALL   (mm)=     25.00        25.00       25.00
     RUNOFF COEFFICIENT   =      1.00         0.61        0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0361)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.3120      0.0220
                         0.3110     0.0010    |  0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0358)      1.813     0.226      1.50      24.01
   OUTFLOW: ID= 1 (  0361)      1.813     0.236      1.50      24.01

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=104.23
                TIME SHIFT OF PEAK FLOW          (min)=  0.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

    **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                   CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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--------------------
| CALIB            |
| STANDHYD (  0375)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
```

0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	30.21	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.72 (ii)	5.58 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.32	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	24.00
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0361):	1.81	0.236	1.50	24.01
+ ID2= 2 (0375):	0.16	0.021	1.50	24.00
ID = 3 (0377):	1.97	0.257	1.50	24.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0382)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	30.21	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.56 (ii)	7.42 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.26	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.22	0.01	0.226 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	24.01
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.2700	0.0092
	0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.226	1.50	24.01
OUTFLOW: ID= 1 (0381)	1.813	0.234	1.48	19.03

PEAK FLOW REDUCTION [Qout/Qin](%)=103.34
TIME SHIFT OF PEAK FLOW (min)= -1.00
MAXIMUM STORAGE USED (ha.m.)= 0.0092

**** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
CHECK OUTFLOW/STORAGE TABLE OR REDUCE DT.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0383)	Area (ha)= 0.16
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

			TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	30.21	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.72 (ii)	5.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.16	
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	1.50	1.58	1.50
RUNOFF VOLUME (mm)=	25.00	15.16	24.00
TOTAL RAINFALL (mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT =	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0385)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

			TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	23.36	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.45 (ii)	14.07 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	1.50	1.67	1.50
RUNOFF VOLUME (mm)=	25.00	15.16	17.92
TOTAL RAINFALL (mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT =	1.00	0.61	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0381):	1.81	0.234	1.48	19.03
	+ ID2= 2 (0383):	0.16	0.021	1.50	24.00
	ID = 3 (0384):	1.97	0.254	1.48	19.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0384):	1.97	0.254	1.48	19.43
	+ ID2= 2 (0385):	0.09	0.005	1.50	17.92
	ID = 1 (0384):	2.06	0.259	1.48	19.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0341)	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)=	0.00	0.00
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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	30.21	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.72 (ii)	3.20 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.32	0.27	
				TOTALS
PEAK FLOW	(cms)=	0.02	0.00	0.022 (iii)
TIME TO PEAK	(hrs)=	1.50	1.50	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	24.89
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	1.00

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppD ata\Local\Temp\ 614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0343)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.79	0.02
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	30.21	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.56 (ii)	5.04 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.26	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.24	0.00	0.240 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	24.90
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	1.00

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppD ata\Local\Temp\ 614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB	
STANDHYD (0380)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	23.36	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.45 (ii)	14.07 (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)=	1.50	1.67	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	17.92
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

```
          CN*  =  94.0    Ia = Dep. 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  (  0386)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0341):      0.16   0.022     1.50    24.89
     + ID2= 2 (  0343):      1.81   0.240     1.50    24.90
       ================================================
       ID = 3 (  0386):      1.97   0.262     1.50    24.90

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0386)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0386):      1.97   0.262     1.50    24.90
     + ID2= 2 (  0380):      0.09   0.005     1.50    17.92
       ================================================
       ID = 1 (  0386):      2.06   0.267     1.50    24.59

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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| CALIB            |
| STANDHYD (  0388)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        30.21
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.72 (ii)    5.58 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.021 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.50
     RUNOFF VOLUME    (mm)=      25.00        15.16          24.00
     TOTAL RAINFALL   (mm)=      25.00        25.00          25.00
     RUNOFF COEFFICIENT   =       1.00         0.61           0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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--------------------
| CALIB            |
| STANDHYD (  0389)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n           =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        30.21
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      3.56 (ii)    7.42 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.26         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.22         0.01          0.226 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.50
     RUNOFF VOLUME    (mm)=      25.00        15.16          24.01
     TOTAL RAINFALL   (mm)=      25.00        25.00          25.00
     RUNOFF COEFFICIENT   =       1.00         0.61           0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
```

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

RESERVOIR(0387) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0041	0.0395
	0.0010	0.0091	0.2700	0.0395
	0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.226	1.50	24.01
OUTFLOW: ID= 1 (0387)	1.813	0.004	4.07	19.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.81
TIME SHIFT OF PEAK FLOW (min)=154.00
MAXIMUM STORAGE USED (ha.m.)= 0.0395

READ STORM Ptotal= 25.00 mm	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12 Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0391) ID= 1 DT= 5.0 min	Area (ha)= 0.09 Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

				TOTALS
Max.Eff.Inten.(mm/hr)=		50.21	23.36	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.45 (ii)	14.07 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.33	0.08	
PEAK FLOW	(cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK	(hrs)=	1.50	1.67	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	17.92
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.004	4.07	19.03
+ ID2= 2 (0388):	0.16	0.021	1.50	24.00
ID = 3 (0390):	1.97	0.025	1.50	19.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.025	1.50	19.43
+ ID2= 2 (0391):	0.09	0.005	1.50	17.92
ID = 1 (0390):	2.06	0.030	1.50	19.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM Ptotal= 25.00 mm	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12 Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0394) ID= 1 DT= 5.0 min	Area (ha)= 0.09 Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	23.36		
over (min)	5.00	15.00		
Storage Coeff. (min)=	1.45 (ii)	14.07 (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)=	1.50	1.67	1.50	
RUNOFF VOLUME (mm)=	25.00	15.16	17.92	
TOTAL RAINFALL (mm)=	25.00	25.00	25.00	
RUNOFF COEFFICIENT =	1.00	0.61	0.72	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm | Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB
STANDHYD (0395) | Area (ha)= 0.16
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	30.21		
over (min)	5.00	10.00		
Storage Coeff. (min)=	1.72 (ii)	5.58 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.32	0.16		
			TOTALS	
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)	
TIME TO PEAK (hrs)=	1.50	1.58	1.50	
RUNOFF VOLUME (mm)=	25.00	15.16	24.00	
TOTAL RAINFALL (mm)=	25.00	25.00	25.00	
RUNOFF COEFFICIENT =	1.00	0.61	0.96	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm | Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB
STANDHYD (0396) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=	50.21	30.21		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.56 (ii)	7.42 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.26	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.22	0.01	0.226 (iii)	
TIME TO PEAK (hrs)=	1.50	1.58	1.50	
RUNOFF VOLUME (mm)=	25.00	15.16	24.01	
TOTAL RAINFALL (mm)=	25.00	25.00	25.00	
RUNOFF COEFFICIENT =	1.00	0.61	0.96	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0393)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0091	0.0347
0.0010	0.0091	0.2700	0.0348

```
                        0.0090     0.0092   |   0.2710      0.0538

                             AREA     QPEAK     TPEAK       R.V.
                             (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0396)      1.813     0.226      1.50      24.01
   OUTFLOW: ID= 1 (  0393)      1.813     0.009      4.02      19.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.02
                  TIME SHIFT OF PEAK FLOW          (min)=151.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0347

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--------------------
| ADD HYD  (  0392)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0393):     1.81   0.009     4.02    19.03
     + ID2= 2 (  0394):     0.09   0.005     1.50    17.92
       ================================================
       ID = 3 (  0392):     1.90   0.014     1.50    18.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0392)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0392):     1.90   0.014     1.50    18.98
     + ID2= 2 (  0395):     0.16   0.021     1.50    24.00
       ================================================
       ID = 1 (  0392):     2.06   0.035     1.50    19.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
               0.17     2.07 |  1.17     5.70 |  2.17     5.19 |  3.17     2.80
               0.33     2.27 |  1.33    10.78 |  2.33     4.47 |  3.33     2.62
               0.50     2.52 |  1.50    50.21 |  2.50     3.95 |  3.50     2.48
               0.67     2.88 |  1.67    13.37 |  2.67     3.56 |  3.67     2.35
               0.83     3.38 |  1.83     8.29 |  2.83     3.25 |  3.83     2.23
               1.00     4.18 |  2.00     6.30 |  3.00     3.01 |  4.00     2.14

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| CALIB            |
| STANDHYD (  0397)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
               0.083     2.07 | 1.083     5.70 | 2.083     5.19 |  3.08     2.80
               0.167     2.07 | 1.167     5.70 | 2.167     5.19 |  3.17     2.80
               0.250     2.27 | 1.250    10.78 | 2.250     4.47 |  3.25     2.62
               0.333     2.27 | 1.333    10.78 | 2.333     4.47 |  3.33     2.62
               0.417     2.52 | 1.417    50.21 | 2.417     3.95 |  3.42     2.48
               0.500     2.52 | 1.500    50.21 | 2.500     3.95 |  3.50     2.48
               0.583     2.88 | 1.583    13.37 | 2.583     3.56 |  3.58     2.35
               0.667     2.88 | 1.667    13.37 | 2.667     3.56 |  3.67     2.35
               0.750     3.38 | 1.750     8.29 | 2.750     3.25 |  3.75     2.23
               0.833     3.38 | 1.833     8.29 | 2.833     3.25 |  3.83     2.23
               0.917     4.17 | 1.917     6.30 | 2.917     3.01 |  3.92     2.14
               1.000     4.18 | 2.000     6.29 | 3.000     3.01 |  4.00     2.14

     Max.Eff.Inten.(mm/hr)=      50.21        30.21
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      3.56 (ii)    7.42 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.26         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.22         0.01         0.226 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.58          1.50
     RUNOFF VOLUME    (mm)=     25.00        15.16         24.01
     TOTAL RAINFALL   (mm)=     25.00        25.00         25.00
     RUNOFF COEFFICIENT   =      1.00         0.61          0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| RESERVOIR(  0399)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0211      0.0273
                          0.0010     0.0091   |   0.2700      0.0274
                          0.0210     0.0092   |   0.2710      0.0474

                             AREA     QPEAK     TPEAK       R.V.
                             (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0397)      1.813     0.226      1.50      24.01
   OUTFLOW: ID= 1 (  0399)      1.813     0.021      2.38      19.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.33
                  TIME SHIFT OF PEAK FLOW          (min)= 53.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0272

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
               0.17     2.07 |  1.17     5.70 |  2.17     5.19 |  3.17     2.80
               0.33     2.27 |  1.33    10.78 |  2.33     4.47 |  3.33     2.62
               0.50     2.52 |  1.50    50.21 |  2.50     3.95 |  3.50     2.48
               0.67     2.88 |  1.67    13.37 |  2.67     3.56 |  3.67     2.35
               0.83     3.38 |  1.83     8.29 |  2.83     3.25 |  3.83     2.23
               1.00     4.18 |  2.00     6.30 |  3.00     3.01 |  4.00     2.14

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| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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     2.07 | 1.083     5.70 | 2.083     5.19 |  3.08     2.80
               0.167     2.07 | 1.167     5.70 | 2.167     5.19 |  3.17     2.80
               0.250     2.27 | 1.250    10.78 | 2.250     4.47 |  3.25     2.62
               0.333     2.27 | 1.333    10.78 | 2.333     4.47 |  3.33     2.62
               0.417     2.52 | 1.417    50.21 | 2.417     3.95 |  3.42     2.48
```

0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	30.21	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.72 (ii)	5.58 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.32	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK	(hrs)=	1.50	1.58	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	24.00
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0400)	Area (ha)= 0.09	
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00	Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Max.Eff.Inten.(mm/hr)=		50.21	23.36	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.45 (ii)	14.07 (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)=	1.50	1.67	1.50
RUNOFF VOLUME	(mm)=	25.00	15.16	17.92
TOTAL RAINFALL	(mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT	=	1.00	0.61	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0401)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0398):	0.16	0.021	1.50	24.00
	+ ID2= 2 (0399):	1.81	0.021	2.38	19.03
	ID = 3 (0401):	1.97	0.042	1.50	19.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0401)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0401):	1.97	0.042	1.50	19.43
	+ ID2= 2 (0400):	0.09	0.005	1.50	17.92
	ID = 1 (0401):	2.06	0.047	1.50	19.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0402)	Area (ha)= 0.09	
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00	Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35

0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

				TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	23.36		
over (min)	5.00	15.00		
Storage Coeff. (min)=	1.45 (ii)	14.07 (ii)		
Unit Hyd. Tpeak (min)=	5.00	15.00		
Unit Hyd. peak (cms)=	0.33	0.08		
PEAK FLOW (cms)=	0.00	0.00		0.005 (iii)
TIME TO PEAK (hrs)=	1.50	1.67		1.50
RUNOFF VOLUME (mm)=	25.00	15.16		17.92
TOTAL RAINFALL (mm)=	25.00	25.00		25.00
RUNOFF COEFFICIENT =	1.00	0.61		0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm | Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0404) | Area (ha)= 0.16
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

				TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	30.21		
over (min)	5.00	10.00		
Storage Coeff. (min)=	1.72 (ii)	5.58 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.32	0.16		
PEAK FLOW (cms)=	0.02	0.00		0.021 (iii)
TIME TO PEAK (hrs)=	1.50	1.58		1.50
RUNOFF VOLUME (mm)=	25.00	15.16		24.00
TOTAL RAINFALL (mm)=	25.00	25.00		25.00
RUNOFF COEFFICIENT =	1.00	0.61		0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm | Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0406) | Area (ha)= 1.81
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

				TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	30.21		
over (min)	5.00	10.00		
Storage Coeff. (min)=	3.56 (ii)	7.42 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.26	0.13		
PEAK FLOW (cms)=	0.22	0.01		0.226 (iii)
TIME TO PEAK (hrs)=	1.50	1.58		1.50
RUNOFF VOLUME (mm)=	25.00	15.16		24.01
TOTAL RAINFALL (mm)=	25.00	25.00		25.00
RUNOFF COEFFICIENT =	1.00	0.61		0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)       1.813     0.226      1.50      24.01
   OUTFLOW: ID= 1 (  0405)       1.813     0.270      1.45      19.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=119.39
                  TIME SHIFT OF PEAK FLOW         (min)= -3.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0132

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.005     1.50    17.92
     + ID2= 2 (  0404):     0.16   0.021     1.50    24.00
       ==================================================
       ID = 3 (  0403):     0.25   0.026     1.50    21.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.026     1.50    21.81
     + ID2= 2 (  0405):     1.81   0.270     1.45    19.03
       ==================================================
       ID = 1 (  0403):     2.06   0.295     1.45    19.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        23.36
               over (min)        5.00        15.00
     Storage Coeff.  (min)=      1.45 (ii)   14.07 (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)=      1.50         1.67        1.50
     RUNOFF VOLUME    (mm)=     25.00        15.16       17.92
     TOTAL RAINFALL   (mm)=     25.00        25.00       25.00
     RUNOFF COEFFICIENT   =      1.00         0.61        0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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| CALIB            |
| STANDHYD (  0410)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n             =     0.013        0.250

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


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        30.21
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      3.56 (ii)    7.42 (ii)
```

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     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.26          0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.22          0.01          0.226 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.58           1.50
     RUNOFF VOLUME    (mm)=      25.00         15.16          24.01
     TOTAL RAINFALL   (mm)=      25.00         25.00          25.00
     RUNOFF COEFFICIENT   =       1.00          0.61           0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0408)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0022     0.0151
                          0.0010     0.0091   |   0.2700     0.0152
                          0.0021     0.0092   |   0.2710     0.0376

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0410)     1.813     0.226      1.50      24.01
   OUTFLOW: ID= 1 (  0408)     1.813     0.270      1.48      19.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=119.40
                  TIME SHIFT OF PEAK FLOW          (min)= -1.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0151

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
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|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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--------------------
| CALIB            |
| STANDHYD (  0411)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21         30.21
               over (min)        5.00         10.00
     Storage Coeff.  (min)=       1.72 (ii)     5.58 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.32          0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.02          0.00          0.021 (iii)
     TIME TO PEAK    (hrs)=       1.50          1.58           1.50
     RUNOFF VOLUME    (mm)=      25.00         15.16          24.00
     TOTAL RAINFALL   (mm)=      25.00         25.00          25.00
     RUNOFF COEFFICIENT   =       1.00          0.61           0.96

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0407):     0.09    0.005     1.50     17.92
      + ID2= 2 (  0408):     1.81    0.270     1.48     19.03
        ================================================
        ID = 3 (  0409):     1.90    0.275     1.48     18.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 3 (  0409):     1.90    0.275     1.48     18.98
      + ID2= 2 (  0411):     0.16    0.021     1.50     24.00
        ================================================
        ID = 1 (  0409):     2.06    0.296     1.48     19.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|    READ STORM    |    Filename: C:\Users\lmaruska\AppD
|                  |              ata\Local\Temp\
|                  |              614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
| Ptotal= 25.00 mm |    Comments: 25 mm, 4 hr. chicago dist'n. - water qua
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.07 |  1.17    5.70 |  2.17    5.19 |  3.17    2.80
               0.33    2.27 |  1.33   10.78 |  2.33    4.47 |  3.33    2.62
               0.50    2.52 |  1.50   50.21 |  2.50    3.95 |  3.50    2.48
               0.67    2.88 |  1.67   13.37 |  2.67    3.56 |  3.67    2.35
               0.83    3.38 |  1.83    8.29 |  2.83    3.25 |  3.83    2.23
               1.00    4.18 |  2.00    6.30 |  3.00    3.01 |  4.00    2.14

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

--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

			TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	30.21	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.72 (ii)	5.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.16	
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	1.50	1.58	1.50
RUNOFF VOLUME (mm)=	25.00	15.16	24.00
TOTAL RAINFALL (mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT =	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0420) ID= 1 DT= 5.0 min	Area (ha)= 1.81 Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

			TOTALS
Max.Eff.Inten.(mm/hr)=	50.21	30.21	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.56 (ii)	7.42 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.13	
PEAK FLOW (cms)=	0.22	0.01	0.226 (iii)
TIME TO PEAK (hrs)=	1.50	1.58	1.50
RUNOFF VOLUME (mm)=	25.00	15.16	24.01
TOTAL RAINFALL (mm)=	25.00	25.00	25.00
RUNOFF COEFFICIENT =	1.00	0.61	0.96

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0417) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0012	0.0160
	0.0010	0.0091	0.2700	0.0161
	0.0011	0.0092	0.2710	0.0387

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0420)	1.813	0.226	1.50	24.01
OUTFLOW: ID= 1 (0417)	1.813	0.270	1.50	19.03

PEAK FLOW REDUCTION [Qout/Qin](%)=119.39
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.0160

**** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
CHECK OUTFLOW/STORAGE TABLE OR REDUCE DT.

READ STORM	Filename: C:\Users\lmaruska\AppData\Local\Temp\614c6b87-7dd6-4096-b2bd-143505cc4528\0be83f12
Ptotal= 25.00 mm	Comments: 25 mm, 4 hr. chicago dist'n. - water qua

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.07	1.17	5.70	2.17	5.19	3.17	2.80
0.33	2.27	1.33	10.78	2.33	4.47	3.33	2.62
0.50	2.52	1.50	50.21	2.50	3.95	3.50	2.48
0.67	2.88	1.67	13.37	2.67	3.56	3.67	2.35
0.83	3.38	1.83	8.29	2.83	3.25	3.83	2.23
1.00	4.18	2.00	6.30	3.00	3.01	4.00	2.14

CALIB STANDHYD (0421) ID= 1 DT= 5.0 min	Area (ha)= 0.09 Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62

```
              0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
              0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
              0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
              0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
              0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
              0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
              0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
              1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21        23.36
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       1.45 (ii)   14.07 (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)=       1.50         1.67          1.50
     RUNOFF VOLUME    (mm)=      25.00        15.16         17.92
     TOTAL RAINFALL   (mm)=      25.00        25.00         25.00
     RUNOFF COEFFICIENT   =       1.00         0.61          0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):     1.81   0.270     1.50    19.03
      + ID2= 2 (  0419):     0.16   0.021     1.50    24.00
        ==================================================
        ID = 3 (  0418):     1.97   0.291     1.50    19.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):     1.97   0.291     1.50    19.43
      + ID2= 2 (  0421):     0.09   0.005     1.50    17.92
        ==================================================
        ID = 1 (  0418):     2.06   0.296     1.50    19.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

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

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
  Output  filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\0c35b0a9-0
  Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\0c35b0a9-0

DATE: 02-13-2019                          TIME: 09:45:49

USER:


COMMENTS: _____________________________________________________
```

```
  ************************************************
  ** SIMULATION : 5__2-Year - City of Burlingto **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

     TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
      hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
     0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
     0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
     0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
     0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
     1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0358)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
     TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
      hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
    0.083    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
    0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
    0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
    0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
    0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
    0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
    0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
    0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
    0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
    0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
    0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
    1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

  Max.Eff.Inten.(mm/hr)=      68.16        45.46
            over (min)        5.00        10.00
  Storage Coeff.  (min)=      3.15 (ii)    6.57 (ii)
  Unit Hyd. Tpeak (min)=      5.00        10.00
  Unit Hyd. peak  (cms)=      0.27         0.14
                                                  *TOTALS*
  PEAK FLOW       (cms)=      0.30         0.02          0.314 (iii)
  TIME TO PEAK    (hrs)=      1.33         1.42           1.33
  RUNOFF VOLUME    (mm)=     32.34        21.54          31.26
  TOTAL RAINFALL   (mm)=     32.34        32.34          32.34
  RUNOFF COEFFICIENT   =      1.00         0.67           0.97

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

     (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
         CN*  =  94.0    Ia = Dep. Storage  (Above)
    (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
         THAN THE STORAGE COEFFICIENT.
   (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0361)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.3120     0.0220
                         0.3110     0.0010    |  0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0358)    1.813     0.314      1.33      31.26
   OUTFLOW: ID= 1 (  0361)    1.813     0.311      1.33      31.26

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.94
                 TIME SHIFT OF PEAK FLOW         (min)=  0.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0014

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

     TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
      hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
     0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
     0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
     0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
     0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
     1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0375)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.02
     Dep. Storage     (mm)=       0.00         0.00
     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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.52 (ii)	4.94 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.25
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0361):		1.81	0.311	1.33	31.26
+ ID2= 2 (0375):		0.16	0.029	1.33	31.25
ID = 3 (0377):		1.97	0.340	1.33	31.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	
Ptotal= 32.34 mm	

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB		
STANDHYD (0382)	Area (ha)=	1.81
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.15 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.30	0.02	0.314 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.26
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)		OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1		(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 1.0 min		0.0000	0.0090	0.2700	0.0092
		0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.314	1.33	31.26
OUTFLOW: ID= 1 (0381)	1.813	0.270	1.35	26.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 85.90
TIME SHIFT OF PEAK FLOW (min)= 1.00
MAXIMUM STORAGE USED (ha.m.)= 0.0101

CHICAGO STORM	
Ptotal= 32.34 mm	

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB		
STANDHYD (0383)	Area (ha)=	0.16
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00

```
     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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.52 (ii)    4.94 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.22
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.03         0.00          0.029 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         31.25
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0385)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00        15.00
     Storage Coeff.  (min)=      1.28 (ii)   10.95 (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          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.50          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         24.59
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0384)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0381):      1.81    0.270     1.35    26.28
     + ID2= 2 (  0383):      0.16    0.029     1.33    31.25
       ================================================
       ID = 3 (  0384):      1.97    0.299     1.33    26.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0384)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0384):      1.97    0.299     1.33    26.67
     + ID2= 2 (  0385):      0.09    0.008     1.33    24.59
       ================================================
       ID = 1 (  0384):      2.06    0.307     1.33    26.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0341)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
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--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.16         0.00
     Dep. Storage     (mm)=      0.00         0.00
     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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.52 (ii)    2.83 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.28
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.03         0.00      0.030 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54      32.23
     TOTAL RAINFALL   (mm)=     32.34        32.34      32.34
     RUNOFF COEFFICIENT   =      1.00         0.67       1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0343)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.79         0.02
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      3.15 (ii)    4.46 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.27         0.23
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.33         0.00      0.331 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54      32.23
     TOTAL RAINFALL   (mm)=     32.34        32.34      32.34
     RUNOFF COEFFICIENT   =      1.00         0.67       1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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| CALIB            |
| STANDHYD (  0380)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
```

0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=	68.16	45.46	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.28 (ii)	10.95 (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	0.008 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	32.34	21.54	24.59
TOTAL RAINFALL (mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT =	1.00	0.67	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0341):	0.16	0.030	1.33	32.23
+ ID2= 2 (0343):	1.81	0.331	1.33	32.23
ID = 3 (0386):	1.97	0.361	1.33	32.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0386):	1.97	0.361	1.33	32.23
+ ID2= 2 (0380):	0.09	0.008	1.33	24.59
ID = 1 (0386):	2.06	0.369	1.33	31.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A= 592.600
Ptotal= 32.34 mm	B= 6.000
	C= 0.780
	used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB	
STANDHYD (0388)	Area (ha)= 0.16
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=	68.16	45.46	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.52 (ii)	4.94 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.22	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	32.34	21.54	31.25
TOTAL RAINFALL (mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT =	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters: A= 592.600
Ptotal= 32.34 mm	B= 6.000
	C= 0.780
	used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB	
STANDHYD (0389)	Area (ha)= 1.81
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44

0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.15 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.14	
PEAK FLOW	(cms)=	0.30	0.02	0.314 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.26
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0387)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0041	0.0395
0.0010	0.0091	0.2700	0.0395
0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.314	1.33	31.26
OUTFLOW: ID= 1 (0387)	1.813	0.086	1.70	26.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.32
TIME SHIFT OF PEAK FLOW (min)= 22.00
MAXIMUM STORAGE USED (ha.m.)= 0.0398

CHICAGO STORM
Ptotal= 32.34 mm

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB
STANDHYD (0391)
ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.28 (ii)	10.95 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.33	0.09	
PEAK FLOW	(cms)=	0.00	0.00	0.008 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	24.59
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.086	1.70	26.28
+ ID2= 2 (0388):	0.16	0.029	1.33	31.25
ID = 3 (0390):	1.97	0.091	1.70	26.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.091	1.70	26.67
+ ID2= 2 (0391):	0.09	0.008	1.33	24.59
ID = 1 (0390):	2.06	0.094	1.70	26.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM
Ptotal= 32.34 mm

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

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--------------------
| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00        15.00
     Storage Coeff.  (min)=      1.28 (ii)   10.95 (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          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.50          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         24.59
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.52 (ii)    4.94 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.22
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.03         0.00          0.029 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         31.25
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n            =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
```

0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.15 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.30	0.02	0.314 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.26
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0393)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0091	0.0347
	0.0010	0.0091	0.2700	0.0348
	0.0090	0.0092	0.2710	0.0538

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0396)		1.813	0.314	1.33	31.26
OUTFLOW: ID= 1 (0393)		1.813	0.124	1.55	26.28
	PEAK FLOW REDUCTION [Qout/Qin](%)=		39.59		
	TIME SHIFT OF PEAK FLOW (min)=		13.00		
	MAXIMUM STORAGE USED (ha.m.)=		0.0348		

ADD HYD (0392)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0393):	1.81	0.124	1.55	26.28
	+ ID2= 2 (0394):	0.09	0.008	1.33	24.59
	ID = 3 (0392):	1.90	0.130	1.55	26.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0392)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0392):	1.90	0.130	1.55	26.20
	+ ID2= 2 (0395):	0.16	0.029	1.33	31.25
	ID = 1 (0392):	2.06	0.137	1.55	26.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters:	A= 592.600
Ptotal= 32.34 mm		B= 6.000
		C= 0.780
	used in: INTENSITY = A / (t + B)^C	
	Duration of storm = 4.00 hrs	
	Storm time step = 10.00 min	

Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB				
STANDHYD (0397)	Area (ha)=	1.81		
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.15 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.30	0.02	0.314 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.26
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0399)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0211	0.0273
	0.0010	0.0091	0.2700	0.0274
	0.0210	0.0092	0.2710	0.0474

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0397)		1.813	0.314	1.33	31.26
OUTFLOW: ID= 1 (0399)		1.813	0.211	1.42	26.28
	PEAK FLOW REDUCTION [Qout/Qin](%)=		67.24		
	TIME SHIFT OF PEAK FLOW (min)=		5.00		
	MAXIMUM STORAGE USED (ha.m.)=		0.0275		

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
               0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
               0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
               0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
               0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
               0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
               0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
               0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
               0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
               0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
               0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
               1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16         45.46
               over (min)        5.00          5.00
     Storage Coeff.  (min)=      1.52 (ii)     4.94 (ii)
     Unit Hyd. Tpeak (min)=      5.00          5.00
     Unit Hyd. peak  (cms)=      0.33          0.22
                                                       *TOTALS*
     PEAK FLOW       (cms)=      0.03          0.00       0.029 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.33       1.33
     RUNOFF VOLUME    (mm)=     32.34         21.54      31.25
     TOTAL RAINFALL   (mm)=     32.34         32.34      32.34
     RUNOFF COEFFICIENT   =      1.00          0.67       0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


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--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
               0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
               0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
               0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
               0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
               0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
               0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
               0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
               0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
               0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
               0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
               1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16         45.46
               over (min)        5.00          15.00
     Storage Coeff.  (min)=      1.28 (ii)     10.95 (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       0.008 (iii)
     TIME TO PEAK    (hrs)=      1.33           1.50       1.33
     RUNOFF VOLUME    (mm)=     32.34          21.54      24.59
     TOTAL RAINFALL   (mm)=     32.34          32.34      32.34
     RUNOFF COEFFICIENT   =      1.00           0.67       0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0398):     0.16    0.029     1.33     31.25
      + ID2= 2 (  0399):     1.81    0.211     1.42     26.28
        ==========================================================
        ID = 3 (  0401):     1.97    0.222     1.42     26.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 3 (  0401):     1.97    0.222     1.42     26.67
      + ID2= 2 (  0400):     0.09    0.008     1.33     24.59
        ==========================================================
        ID = 1 (  0401):     2.06    0.228     1.42     26.58
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM Ptotal= 32.34 mm	IDF curve parameters: A= 592.600 B= 6.000 C= 0.780 used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB STANDHYD (0402) ID= 1 DT= 5.0 min	Area (ha)= 0.09 Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	15.00	
Storage Coeff. (min)=		1.28 (ii)	10.95 (ii)	
Unit Hyd. Tpeak (min)=		5.00	15.00	
Unit Hyd. peak (cms)=		0.33	0.09	
PEAK FLOW	(cms)=	0.00	0.00	0.008 (iii)
TIME TO PEAK	(hrs)=	1.33	1.50	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	24.59
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM Ptotal= 32.34 mm	IDF curve parameters: A= 592.600 B= 6.000 C= 0.780 used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB STANDHYD (0404) ID= 1 DT= 5.0 min	Area (ha)= 0.16 Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.52 (ii)	4.94 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.22	
PEAK FLOW	(cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.25
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM Ptotal= 32.34 mm	IDF curve parameters: A= 592.600 B= 6.000 C= 0.780 used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

```
--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n             =    0.013        0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)         5.00        10.00
     Storage Coeff.  (min)=      3.15 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.27         0.14
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.30         0.02          0.314 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         31.26
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)     1.813     0.314      1.33      31.26
   OUTFLOW: ID= 1 (  0405)     1.813     0.270      1.35      26.28

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)= 85.91
                 TIME SHIFT OF PEAK FLOW         (min)=  1.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0145

--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.008     1.33    24.59
     + ID2= 2 (  0404):     0.16   0.029     1.33    31.25
       ========================================================
       ID = 3 (  0403):     0.25   0.037     1.33    28.85
```

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

--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.037     1.33    28.85
     + ID2= 2 (  0405):     1.81   0.270     1.35    26.28
       ========================================================
       ID = 1 (  0403):     2.06   0.307     1.33    26.59

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92

--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)         5.00        15.00
     Storage Coeff.  (min)=      1.28 (ii)   10.95 (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          0.008 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.50          1.33
     RUNOFF VOLUME    (mm)=     32.34        21.54         24.59
     TOTAL RAINFALL   (mm)=     32.34        32.34         32.34
     RUNOFF COEFFICIENT   =      1.00         0.67          0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
```

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

CHICAGO STORM	Ptotal= 32.34 mm

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB	STANDHYD (0410)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.15 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.27	0.14	
PEAK FLOW	(cms)=	0.30	0.02	0.314 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.26
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0408)	IN= 2---> OUT= 1	DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0022	0.0151
0.0010	0.0091	0.2700	0.0152
0.0021	0.0092	0.2710	0.0376

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0410)	1.813	0.314	1.33	31.26
OUTFLOW: ID= 1 (0408)	1.813	0.270	1.35	26.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 85.91
TIME SHIFT OF PEAK FLOW (min)= 1.00
MAXIMUM STORAGE USED (ha.m.)= 0.0163

CHICAGO STORM	Ptotal= 32.34 mm

IDF curve parameters: A= 592.600
B= 6.000
C= 0.780
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.21	1.17	17.15	2.17	5.20	3.17	2.63
0.33	2.53	1.33	68.16	2.33	4.43	3.33	2.44
0.50	2.98	1.50	22.38	2.50	3.87	3.50	2.28
0.67	3.65	1.67	11.94	2.67	3.45	3.67	2.14
0.83	4.81	1.83	8.24	2.83	3.11	3.83	2.02
1.00	7.29	2.00	6.35	3.00	2.85	4.00	1.92

CALIB	STANDHYD (0411)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.21	1.083	17.15	2.083	5.20	3.08	2.63
0.167	2.21	1.167	17.15	2.167	5.20	3.17	2.63
0.250	2.53	1.250	68.16	2.250	4.43	3.25	2.44
0.333	2.53	1.333	68.16	2.333	4.43	3.33	2.44
0.417	2.98	1.417	22.38	2.417	3.87	3.42	2.28
0.500	2.98	1.500	22.38	2.500	3.87	3.50	2.28
0.583	3.65	1.583	11.94	2.583	3.45	3.58	2.14
0.667	3.65	1.667	11.94	2.667	3.45	3.67	2.14
0.750	4.81	1.750	8.24	2.750	3.11	3.75	2.02
0.833	4.81	1.833	8.24	2.833	3.11	3.83	2.02
0.917	7.29	1.917	6.35	2.917	2.85	3.92	1.92
1.000	7.29	2.000	6.35	3.000	2.85	4.00	1.92

				TOTALS
Max.Eff.Inten.(mm/hr)=		68.16	45.46	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.52 (ii)	4.94 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.22	
PEAK FLOW	(cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	32.34	21.54	31.25
TOTAL RAINFALL	(mm)=	32.34	32.34	32.34
RUNOFF COEFFICIENT	=	1.00	0.67	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.008     1.33    24.59
     + ID2= 2 (  0408):     1.81   0.270     1.35    26.28
       ================================================
       ID = 3 (  0409):     1.90   0.278     1.33    26.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.278     1.33    26.20
     + ID2= 2 (  0411):     0.16   0.029     1.33    31.25
       ================================================
       ID = 1 (  0409):     2.06   0.307     1.33    26.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          0.14           0.02
     Dep. Storage     (mm)=          0.00           0.00
     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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16         45.46
               over (min)         5.00          5.00
     Storage Coeff.  (min)=       1.52 (ii)     4.94 (ii)
     Unit Hyd. Tpeak (min)=       5.00          5.00
     Unit Hyd. peak  (cms)=       0.33          0.22
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.03          0.00          0.029 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.33           1.33
     RUNOFF VOLUME    (mm)=      32.34         21.54          31.25
     TOTAL RAINFALL   (mm)=      32.34         32.34          32.34
     RUNOFF COEFFICIENT   =       1.00          0.67           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          1.63           0.18
     Dep. Storage     (mm)=          0.00           0.00
     Average Slope     (%)=          1.00           2.00
     Length            (m)=        109.94          40.00
     Mannings n             =        0.013          0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16         45.46
               over (min)         5.00          10.00
     Storage Coeff.  (min)=       3.15 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=       5.00          10.00
     Unit Hyd. peak  (cms)=       0.27          0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.30          0.02          0.314 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.42           1.33
     RUNOFF VOLUME    (mm)=      32.34         21.54          31.26
     TOTAL RAINFALL   (mm)=      32.34         32.34          32.34
     RUNOFF COEFFICIENT   =       1.00          0.67           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0012     0.0160
                          0.0010     0.0091   |   0.2700     0.0161
                          0.0011     0.0092   |   0.2710     0.0387

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)      1.813     0.314      1.33      31.26
   OUTFLOW: ID= 1 (  0417)      1.813     0.270      1.35      26.28

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 85.91
                  TIME SHIFT OF PEAK FLOW          (min)=  1.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0174

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 592.600
| Ptotal= 32.34 mm |                          B=   6.000
--------------------                          C=   0.780
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.21 |  1.17   17.15 |  2.17    5.20 |  3.17    2.63
               0.33    2.53 |  1.33   68.16 |  2.33    4.43 |  3.33    2.44
               0.50    2.98 |  1.50   22.38 |  2.50    3.87 |  3.50    2.28
               0.67    3.65 |  1.67   11.94 |  2.67    3.45 |  3.67    2.14
               0.83    4.81 |  1.83    8.24 |  2.83    3.11 |  3.83    2.02
               1.00    7.29 |  2.00    6.35 |  3.00    2.85 |  4.00    1.92


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    2.21 | 1.083   17.15 | 2.083    5.20 |  3.08    2.63
              0.167    2.21 | 1.167   17.15 | 2.167    5.20 |  3.17    2.63
              0.250    2.53 | 1.250   68.16 | 2.250    4.43 |  3.25    2.44
              0.333    2.53 | 1.333   68.16 | 2.333    4.43 |  3.33    2.44
              0.417    2.98 | 1.417   22.38 | 2.417    3.87 |  3.42    2.28
              0.500    2.98 | 1.500   22.38 | 2.500    3.87 |  3.50    2.28
              0.583    3.65 | 1.583   11.94 | 2.583    3.45 |  3.58    2.14
              0.667    3.65 | 1.667   11.94 | 2.667    3.45 |  3.67    2.14
              0.750    4.81 | 1.750    8.24 | 2.750    3.11 |  3.75    2.02
              0.833    4.81 | 1.833    8.24 | 2.833    3.11 |  3.83    2.02
              0.917    7.29 | 1.917    6.35 | 2.917    2.85 |  3.92    1.92
              1.000    7.29 | 2.000    6.35 | 3.000    2.85 |  4.00    1.92

     Max.Eff.Inten.(mm/hr)=      68.16        45.46
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       1.28 (ii)   10.95 (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          0.008 (iii)

     TIME TO PEAK    (hrs)=       1.33         1.50           1.33
     RUNOFF VOLUME    (mm)=      32.34        21.54          24.59
     TOTAL RAINFALL   (mm)=      32.34        32.34          32.34
     RUNOFF COEFFICIENT   =       1.00         0.67           0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):      1.81    0.270    1.35     26.28
      + ID2= 2 (  0419):      0.16    0.029    1.33     31.25
        ================================================
        ID = 3 (  0418):      1.97    0.299    1.33     26.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):      1.97    0.299    1.33     26.67
      + ID2= 2 (  0421):      0.09    0.008    1.33     24.59
        ================================================
        ID = 1 (  0418):      2.06    0.307    1.33     26.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

       V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
  Output  filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\e3fbdc12-4
  Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\e3fbdc12-4

DATE: 02-13-2019                          TIME: 09:45:49

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 6__5-Year - City of Burlingto **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0358)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.63          0.18
     Dep. Storage     (mm)=        0.00          0.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=      109.94         40.00
     Mannings n             =      0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
               0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
               0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
               0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
               0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
               0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
               0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
               0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
               0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
               0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
               0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
               1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      2.84 (ii)    5.93 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.28         0.15
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.39         0.02          0.413 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42           1.33
     RUNOFF VOLUME    (mm)=     41.69        30.02          40.52
     TOTAL RAINFALL   (mm)=     41.69        41.69          41.69
     RUNOFF COEFFICIENT   =      1.00         0.72           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0361)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.3120     0.0220
                          0.3110     0.0010   |   0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0358)      1.813     0.413      1.33      40.52
   OUTFLOW: ID= 1 (  0361)      1.813     0.311      1.33      40.53

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 75.34
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0048

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0375)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.14          0.02
     Dep. Storage     (mm)=        0.00          0.00
     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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.37 (ii)	4.46 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.51
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0361):		1.81	0.311	1.33	40.53
+ ID2= 2 (0375):		0.16	0.038	1.33	40.51
ID = 3 (0377):		1.97	0.349	1.33	40.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	Area (ha)= 1.81
STANDHYD (0382)	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.84 (ii)	5.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.28	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.39	0.02	0.413 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.52
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)		OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1		(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 1.0 min		0.0000	0.0090	0.2700	0.0092
		0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.413	1.33	40.52
OUTFLOW: ID= 1 (0381)	1.813	0.270	1.38	35.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 65.44
TIME SHIFT OF PEAK FLOW (min)= 3.00
MAXIMUM STORAGE USED (ha.m.)= 0.0145

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	Area (ha)= 0.16
STANDHYD (0383)	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00

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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.37 (ii)	4.46 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.51
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	
STANDHYD (0385)	Area (ha)= 0.09
ID= 1 DT= 5.0 min	Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.16 (ii)	9.56 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.01	0.013 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	33.34
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0384)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0381):	1.81	0.270	1.38	35.54
+ ID2= 2 (0383):	0.16	0.038	1.33	40.51
ID = 3 (0384):	1.97	0.308	1.33	35.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0384)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0384):	1.97	0.308	1.33	35.94
+ ID2= 2 (0385):	0.09	0.013	1.33	33.34
ID = 1 (0384):	2.06	0.321	1.33	35.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	
STANDHYD (0341)	Area (ha)= 0.16
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.16         0.00
     Dep. Storage     (mm)=      0.00         0.00
     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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=     88.09        64.62
               over (min)        5.00         5.00
     Storage Coeff.  (min)=     1.37 (ii)    2.55 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.33         0.29
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.04         0.00        0.039 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33         1.33
     RUNOFF VOLUME    (mm)=    41.69        30.02        41.57
     TOTAL RAINFALL   (mm)=    41.69        41.69        41.69
     RUNOFF COEFFICIENT   =     1.00         0.72         1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0343)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.79         0.02
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=     88.09        64.62
               over (min)        5.00         5.00
     Storage Coeff.  (min)=     2.84 (ii)    4.03 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.28         0.24
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.43         0.00        0.432 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33         1.33
     RUNOFF VOLUME    (mm)=    41.69        30.02        41.57
     TOTAL RAINFALL   (mm)=    41.69        41.69        41.69
     RUNOFF COEFFICIENT   =     1.00         0.72         1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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| CALIB            |
| STANDHYD (  0380)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
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0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=	88.09	64.62	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.16 (ii)	9.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.11	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.013 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	41.69	30.02	33.34
TOTAL RAINFALL (mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT =	1.00	0.72	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0341):		0.16	0.039	1.33	41.57
+ ID2= 2 (0343):		1.81	0.432	1.33	41.57
ID = 3 (0386):		1.97	0.471	1.33	41.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0386):		1.97	0.471	1.33	41.57
+ ID2= 2 (0380):		0.09	0.013	1.33	33.34
ID = 1 (0386):		2.06	0.484	1.33	41.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB			
STANDHYD (0388)	Area (ha)=	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=	88.09	64.62	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.37 (ii)	4.46 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.23	
			TOTALS
PEAK FLOW (cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	41.69	30.02	40.51
TOTAL RAINFALL (mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT =	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters: A= 697.400
Ptotal= 41.69 mm	B= 5.000
	C= 0.764

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB			
STANDHYD (0389)	Area (ha)=	1.81	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28

0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=	88.09	64.62	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.84 (ii)	5.93 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.15	
			TOTALS
PEAK FLOW (cms)=	0.39	0.02	0.413 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	41.69	30.02	40.52
TOTAL RAINFALL (mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT =	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0387)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0041	0.0395
0.0010	0.0091	0.2700	0.0395
0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.413	1.33	40.52
OUTFLOW: ID= 1 (0387)	1.813	0.270	1.43	35.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 65.39
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0402

CHICAGO STORM
Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB
STANDHYD (0391)
ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=	88.09	64.62	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.16 (ii)	9.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.11	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.013 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	41.69	30.02	33.34
TOTAL RAINFALL (mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT =	1.00	0.72	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.270	1.43	35.54
+ ID2= 2 (0388):	0.16	0.038	1.33	40.51
ID = 3 (0390):	1.97	0.283	1.43	35.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.283	1.43	35.94
+ ID2= 2 (0391):	0.09	0.013	1.33	33.34
ID = 1 (0390):	2.06	0.292	1.43	35.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM
Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

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--------------------
| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.16 (ii)    9.56 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.34         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.01          0.013 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=     41.69        30.02         33.34
     TOTAL RAINFALL   (mm)=     41.69        41.69         41.69
     RUNOFF COEFFICIENT   =      1.00         0.72          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.37 (ii)    4.46 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.23
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.04         0.00          0.038 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=     41.69        30.02         40.51
     TOTAL RAINFALL   (mm)=     41.69        41.69         41.69
     RUNOFF COEFFICIENT   =      1.00         0.72          0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n           =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
```

```
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       2.84 (ii)    5.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.28         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.39         0.02          0.413 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.42           1.33
     RUNOFF VOLUME    (mm)=      41.69        30.02          40.52
     TOTAL RAINFALL   (mm)=      41.69        41.69          41.69
     RUNOFF COEFFICIENT   =       1.00         0.72           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0393)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0091     0.0347
                          0.0010     0.0091   |   0.2700     0.0348
                          0.0090     0.0092   |   0.2710     0.0538

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0396)      1.813      0.413      1.33      40.52
   OUTFLOW: ID= 1 (  0393)      1.813      0.270      1.38      35.54

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 65.39
                  TIME SHIFT OF PEAK FLOW         (min)=  3.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0354

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--------------------
| ADD HYD  (  0392)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0393):     1.81   0.270     1.38    35.54
     + ID2= 2 (  0394):     0.09   0.013     1.33    33.34
       ==========================================
       ID = 3 (  0392):     1.90   0.281     1.38    35.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0392)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 3 (  0392):     1.90   0.281     1.38    35.44
     + ID2= 2 (  0395):     0.16   0.038     1.33    40.51
       ==========================================
       ID = 1 (  0392):     2.06   0.304     1.38    35.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

                         Duration of storm  =  4.00 hrs
                         Storm time step    = 10.00 min
```

```
                Time to peak ratio =  0.33

              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.17    2.98 |  1.17   21.37 |'  2.17    6.78 |  3.17    3.52
              0.33    3.40 |  1.33   88.09 |'  2.33    5.81 |  3.33    3.28
              0.50    3.97 |  1.50   27.73 |'  2.50    5.11 |  3.50    3.08
              0.67    4.84 |  1.67   15.03 |'  2.67    4.57 |  3.67    2.90
              0.83    6.29 |  1.83   10.53 |'  2.83    4.15 |  3.83    2.74
              1.00    9.36 |  2.00    8.21 |'  3.00    3.81 |  4.00    2.60

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--------------------
| CALIB            |
| STANDHYD (  0397)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63          0.18
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     109.94         40.00
     Mannings n            =      0.013         0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
             0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
             0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
             0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
             0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
             0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
             0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
             0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
             0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
             0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
             0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
             1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       2.84 (ii)    5.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.28         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.39         0.02          0.413 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.42           1.33
     RUNOFF VOLUME    (mm)=      41.69        30.02          40.52
     TOTAL RAINFALL   (mm)=      41.69        41.69          41.69
     RUNOFF COEFFICIENT   =       1.00         0.72           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0399)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0211     0.0273
                          0.0010     0.0091   |   0.2700     0.0274
                          0.0210     0.0092   |   0.2710     0.0474

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0397)      1.813      0.413      1.33      40.52
   OUTFLOW: ID= 1 (  0399)      1.813      0.270      1.38      35.54

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 65.41
                  TIME SHIFT OF PEAK FLOW         (min)=  3.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0296

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.14          0.02
     Dep. Storage     (mm)=         0.00          0.00
     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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
               0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
               0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
               0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
               0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
               0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
               0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
               0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
               0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
               0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
               0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
               1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09         64.62
               over (min)        5.00          5.00
     Storage Coeff.  (min)=      1.37 (ii)     4.46 (ii)
     Unit Hyd. Tpeak (min)=      5.00          5.00
     Unit Hyd. peak  (cms)=      0.33          0.23
                                                       *TOTALS*
     PEAK FLOW       (cms)=      0.04          0.00        0.038 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.33         1.33
     RUNOFF VOLUME    (mm)=     41.69         30.02        40.51
     TOTAL RAINFALL   (mm)=     41.69         41.69        41.69
     RUNOFF COEFFICIENT   =      1.00          0.72         0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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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| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
```

```
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.03          0.06
     Dep. Storage     (mm)=         0.00          0.00
     Average Slope     (%)=         1.00          2.00
     Length            (m)=        24.49         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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
               0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
               0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
               0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
               0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
               0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
               0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
               0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
               0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
               0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
               0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
               1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09         64.62
               over (min)        5.00          10.00
     Storage Coeff.  (min)=      1.16 (ii)     9.56 (ii)
     Unit Hyd. Tpeak (min)=      5.00          10.00
     Unit Hyd. peak  (cms)=      0.34          0.11
                                                       *TOTALS*
     PEAK FLOW       (cms)=      0.01          0.01         0.013 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42          1.33
     RUNOFF VOLUME    (mm)=     41.69         30.02         33.34
     TOTAL RAINFALL   (mm)=     41.69         41.69         41.69
     RUNOFF COEFFICIENT   =      1.00          0.72          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0398):     0.16    0.038     1.33     40.51
      + ID2= 2 (  0399):     1.81    0.270     1.38     35.54
        ================================================
        ID = 3 (  0401):     1.97    0.308     1.33     35.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 3 (  0401):     1.97    0.308     1.33     35.94
      + ID2= 2 (  0400):     0.09    0.013     1.33     33.34
        ================================================
        ID = 1 (  0401):     2.06    0.321     1.33     35.82
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	STANDHYD (0402)	ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

				TOTALS
Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.16 (ii)	9.56 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.11	
PEAK FLOW	(cms)=	0.01	0.01	0.013 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	33.34
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	STANDHYD (0404)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

				TOTALS
Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.37 (ii)	4.46 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.23	
PEAK FLOW	(cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.51
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

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--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n             =     0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      2.84 (ii)    5.93 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.28         0.15
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.39         0.02          0.413 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=     41.69        30.02         40.52
     TOTAL RAINFALL   (mm)=     41.69        41.69         41.69
     RUNOFF COEFFICIENT   =      1.00         0.72          0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)     1.813     0.413      1.33      40.52
   OUTFLOW: ID= 1 (  0405)     1.813     0.270      1.38      35.54

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 65.44
                  TIME SHIFT OF PEAK FLOW         (min)=  3.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0185

--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.013     1.33    33.34
     + ID2= 2 (  0404):     0.16   0.038     1.33    40.51
       =====================================================
       ID = 3 (  0403):     0.25   0.051     1.33    37.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.051     1.33    37.93
     + ID2= 2 (  0405):     1.81   0.270     1.38    35.54
       =====================================================
       ID = 1 (  0403):     2.06   0.321     1.33    35.83

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60

--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.16 (ii)    9.56 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.34         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.01          0.013 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=     41.69        30.02         33.34
     TOTAL RAINFALL   (mm)=     41.69        41.69         41.69
     RUNOFF COEFFICIENT   =      1.00         0.72          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
```

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

CHICAGO STORM	Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	STANDHYD (0410)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.84 (ii)	5.93 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.28	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.39	0.02	0.413 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.52
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0408)	IN= 2---> OUT= 1	DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0022	0.0151
0.0010	0.0091	0.2700	0.0152
0.0021	0.0092	0.2710	0.0376

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0410)	1.813	0.413	1.33	40.52
OUTFLOW: ID= 1 (0408)	1.813	0.270	1.38	35.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 65.45
TIME SHIFT OF PEAK FLOW (min)= 3.00
MAXIMUM STORAGE USED (ha.m.)= 0.0209

CHICAGO STORM	Ptotal= 41.69 mm

IDF curve parameters: A= 697.400
B= 5.000
C= 0.764
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.98	1.17	21.37	2.17	6.78	3.17	3.52
0.33	3.40	1.33	88.09	2.33	5.81	3.33	3.28
0.50	3.97	1.50	27.73	2.50	5.11	3.50	3.08
0.67	4.84	1.67	15.03	2.67	4.57	3.67	2.90
0.83	6.29	1.83	10.53	2.83	4.15	3.83	2.74
1.00	9.36	2.00	8.21	3.00	3.81	4.00	2.60

CALIB	STANDHYD (0411)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	2.98	1.083	21.37	2.083	6.78	3.08	3.52
0.167	2.98	1.167	21.37	2.167	6.78	3.17	3.52
0.250	3.40	1.250	88.09	2.250	5.81	3.25	3.28
0.333	3.40	1.333	88.09	2.333	5.81	3.33	3.28
0.417	3.97	1.417	27.73	2.417	5.11	3.42	3.08
0.500	3.97	1.500	27.73	2.500	5.11	3.50	3.08
0.583	4.84	1.583	15.03	2.583	4.57	3.58	2.90
0.667	4.84	1.667	15.03	2.667	4.57	3.67	2.90
0.750	6.29	1.750	10.53	2.750	4.15	3.75	2.74
0.833	6.29	1.833	10.53	2.833	4.15	3.83	2.74
0.917	9.36	1.917	8.21	2.917	3.81	3.92	2.60
1.000	9.36	2.000	8.21	3.000	3.81	4.00	2.60

Max.Eff.Inten.(mm/hr)=		88.09	64.62	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.37 (ii)	4.46 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.00	0.038 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	41.69	30.02	40.51
TOTAL RAINFALL	(mm)=	41.69	41.69	41.69
RUNOFF COEFFICIENT	=	1.00	0.72	0.97

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.013     1.33    33.34
     + ID2= 2 (  0408):     1.81   0.270     1.38    35.54
       ================================================
       ID = 3 (  0409):     1.90   0.283     1.33    35.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.283     1.33    35.44
     + ID2= 2 (  0411):     0.16   0.038     1.33    40.51
       ================================================
       ID = 1 (  0409):     2.06   0.321     1.33    35.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          0.14           0.02
     Dep. Storage     (mm)=          0.00           0.00
     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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09         64.62
               over (min)         5.00          5.00
     Storage Coeff.  (min)=       1.37 (ii)     4.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00          5.00
     Unit Hyd. peak  (cms)=       0.33          0.23
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.04          0.00          0.038 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.33           1.33
     RUNOFF VOLUME    (mm)=      41.69         30.02          40.51
     TOTAL RAINFALL   (mm)=      41.69         41.69          41.69
     RUNOFF COEFFICIENT   =       1.00          0.72           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          1.63           0.18
     Dep. Storage     (mm)=          0.00           0.00
     Average Slope     (%)=          1.00           2.00
     Length            (m)=        109.94          40.00
     Mannings n             =        0.013          0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09         64.62
               over (min)         5.00          5.00
     Storage Coeff.  (min)=       2.84 (ii)     5.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00          5.00
     Unit Hyd. peak  (cms)=       0.28          0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.39          0.02          0.413 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.42           1.33
     RUNOFF VOLUME    (mm)=      41.69         30.02          40.52
     TOTAL RAINFALL   (mm)=      41.69         41.69          41.69
     RUNOFF COEFFICIENT   =       1.00          0.72           0.97

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
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```
          CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0012     0.0160
                          0.0010     0.0091   |   0.2700     0.0161
                          0.0011     0.0092   |   0.2710     0.0387

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)      1.813     0.413      1.33      40.52
   OUTFLOW: ID= 1 (  0417)      1.813     0.270      1.38      35.54

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 65.45
                  TIME SHIFT OF PEAK FLOW          (min)=  3.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0217

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 697.400
| Ptotal= 41.69 mm |                          B=   5.000
--------------------                          C=   0.764
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.98 |  1.17   21.37 |  2.17    6.78 |  3.17    3.52
               0.33    3.40 |  1.33   88.09 |  2.33    5.81 |  3.33    3.28
               0.50    3.97 |  1.50   27.73 |  2.50    5.11 |  3.50    3.08
               0.67    4.84 |  1.67   15.03 |  2.67    4.57 |  3.67    2.90
               0.83    6.29 |  1.83   10.53 |  2.83    4.15 |  3.83    2.74
               1.00    9.36 |  2.00    8.21 |  3.00    3.81 |  4.00    2.60


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--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    2.98 | 1.083   21.37 | 2.083    6.78 |  3.08    3.52
              0.167    2.98 | 1.167   21.37 | 2.167    6.78 |  3.17    3.52
              0.250    3.40 | 1.250   88.09 | 2.250    5.81 |  3.25    3.28
              0.333    3.40 | 1.333   88.09 | 2.333    5.81 |  3.33    3.28
              0.417    3.97 | 1.417   27.73 | 2.417    5.11 |  3.42    3.08
              0.500    3.97 | 1.500   27.73 | 2.500    5.11 |  3.50    3.08
              0.583    4.84 | 1.583   15.03 | 2.583    4.57 |  3.58    2.90
              0.667    4.84 | 1.667   15.03 | 2.667    4.57 |  3.67    2.90
              0.750    6.29 | 1.750   10.53 | 2.750    4.15 |  3.75    2.74
              0.833    6.29 | 1.833   10.53 | 2.833    4.15 |  3.83    2.74
              0.917    9.36 | 1.917    8.21 | 2.917    3.81 |  3.92    2.60
              1.000    9.36 | 2.000    8.21 | 3.000    3.81 |  4.00    2.60

     Max.Eff.Inten.(mm/hr)=      88.09        64.62
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.16 (ii)    9.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.013 (iii)

     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      41.69        30.02         33.34
     TOTAL RAINFALL   (mm)=      41.69        41.69         41.69
     RUNOFF COEFFICIENT   =       1.00         0.72          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):     1.81    0.270    1.38     35.54
      + ID2= 2 (  0419):     0.16    0.038    1.33     40.51
        ================================================
        ID = 3 (  0418):     1.97    0.308    1.33     35.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):     1.97    0.308    1.33     35.94
      + ID2= 2 (  0421):     0.09    0.013    1.33     33.34
        ================================================
        ID = 1 (  0418):     2.06    0.321    1.33     35.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
Output filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\10e396f3-5
Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\10e396f3-5

DATE: 02-13-2019 TIME: 09:45:49

USER:

COMMENTS: _____

****
** SIMULATION : 7__25-Year - City of Burlingt **
****

| CHICAGO STORM | Ptotal= 56.03 mm |

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

| CALIB | ID= 1 DT= 5.0 min |

STANDHYD (0358) Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

				TOTALS
Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.53 (ii)	5.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.29	0.16	
PEAK FLOW	(cms)=	0.53	0.04	0.561 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.77
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0361) | IN= 2---> OUT= 1 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3120	0.0220
0.3110	0.0010	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0358)		1.813	0.561	1.33	54.77
OUTFLOW: ID= 1 (0361)		1.813	0.312	1.42	54.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 55.55
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0133

| CHICAGO STORM | Ptotal= 56.03 mm |

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

| CALIB | ID= 1 DT= 5.0 min |

STANDHYD (0375) Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.22 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.24	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.00	0.051 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.75
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0361):		1.81	0.312	1.42	54.77
+ ID2= 2 (0375):		0.16	0.051	1.33	54.75
ID = 3 (0377):		1.97	0.363	1.33	54.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM
Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB
STANDHYD (0382)
ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.53 (ii)	5.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.29	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.53	0.04	0.561 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.77
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.2700	0.0092
0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.561	1.33	54.77
OUTFLOW: ID= 1 (0381)	1.813	0.271	1.42	49.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 48.25
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0232

CHICAGO STORM
Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB
STANDHYD (0383)
ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00

```
     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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
           over (min)           5.00          5.00
     Storage Coeff.  (min)=      1.22 (ii)     3.97 (ii)
     Unit Hyd. Tpeak (min)=      5.00          5.00
     Unit Hyd. peak  (cms)=      0.33          0.24
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.05          0.00          0.051 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.33          1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45         54.75
     TOTAL RAINFALL   (mm)=     56.03         56.03         56.03
     RUNOFF COEFFICIENT   =      1.00          0.78          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0385)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03          0.06
     Dep. Storage     (mm)=      0.00          0.00
     Average Slope     (%)=      1.00          2.00
     Length            (m)=     24.49         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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
           over (min)           5.00          10.00
     Storage Coeff.  (min)=      1.03 (ii)     8.25 (ii)
     Unit Hyd. Tpeak (min)=      5.00          10.00
     Unit Hyd. peak  (cms)=      0.34          0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01          0.01          0.019 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42          1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45         47.04
     TOTAL RAINFALL   (mm)=     56.03         56.03         56.03
     RUNOFF COEFFICIENT   =      1.00          0.78          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0384)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0381):      1.81    0.271     1.42    49.79
     + ID2= 2 (  0383):      0.16    0.051     1.33    54.75
       ================================================
       ID = 3 (  0384):      1.97    0.322     1.33    50.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0384)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0384):      1.97    0.322     1.33    50.18
     + ID2= 2 (  0385):      0.09    0.019     1.33    47.04
       ================================================
       ID = 1 (  0384):      2.06    0.340     1.33    50.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0341)|   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)=	0.00	0.00
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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.22 (ii)	2.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.30	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.00	0.052 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	55.90
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	1.00

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0343)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.79	0.02
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.53 (ii)	3.59 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.29	0.26	
				TOTALS
PEAK FLOW	(cms)=	0.58	0.00	0.583 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	55.90
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	1.00

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0380)	ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92

0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=	117.72	94.43	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.03 (ii)	8.25 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.019 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	56.03	43.45	47.04
TOTAL RAINFALL (mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT =	1.00	0.78	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0341):		0.16	0.052	1.33	55.90
+ ID2= 2 (0343):		1.81	0.583	1.33	55.90
ID = 3 (0386):		1.97	0.635	1.33	55.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0386):		1.97	0.635	1.33	55.90
+ ID2= 2 (0380):		0.09	0.019	1.33	47.04
ID = 1 (0386):		2.06	0.654	1.33	55.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters:	A= 926.900
Ptotal= 56.03 mm		B= 5.000
		C= 0.762
	used in:	INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB			
STANDHYD (0388)	Area (ha)=	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=	117.72	94.43	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.22 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.24	
			TOTALS
PEAK FLOW (cms)=	0.05	0.00	0.051 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	56.03	43.45	54.75
TOTAL RAINFALL (mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT =	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters:	A= 926.900
Ptotal= 56.03 mm		B= 5.000
		C= 0.762
	used in:	INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB			
STANDHYD (0389)	Area (ha)=	1.81	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44

0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.53 (ii)	5.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.29	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.53	0.04	0.561 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.77
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0387) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0041	0.0395
	0.0010	0.0091	0.2700	0.0395
	0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.561	1.33	54.77
OUTFLOW: ID= 1 (0387)	1.813	0.270	1.42	49.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 48.21
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0451

CHICAGO STORM Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB STANDHYD (0391) ID= 1 DT= 5.0 min	Area (ha)= 0.09 Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.03 (ii)	8.25 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.01	0.019 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	47.04
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.270	1.42	49.79
+ ID2= 2 (0388):	0.16	0.051	1.33	54.75
ID = 3 (0390):	1.97	0.321	1.33	50.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.321	1.33	50.18
+ ID2= 2 (0391):	0.09	0.019	1.33	47.04
ID = 1 (0390):	2.06	0.340	1.33	50.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

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| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72        94.43
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.03 (ii)    8.25 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.01         0.01          0.019 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=    56.03        43.45         47.04
     TOTAL RAINFALL   (mm)=    56.03        56.03         56.03
     RUNOFF COEFFICIENT   =     1.00         0.78          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72        94.43
               over (min)        5.00         5.00
     Storage Coeff.  (min)=     1.22 (ii)    3.97 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.33         0.24
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.05         0.00          0.051 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=    56.03        43.45         54.75
     TOTAL RAINFALL   (mm)=    56.03        56.03         56.03
     RUNOFF COEFFICIENT   =     1.00         0.78          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n           =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
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              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)         5.00         10.00
     Storage Coeff.  (min)=       2.53 (ii)    5.28 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.29          0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.53          0.04          0.561 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.42           1.33
     RUNOFF VOLUME    (mm)=      56.03         43.45          54.77
     TOTAL RAINFALL   (mm)=      56.03         56.03          56.03
     RUNOFF COEFFICIENT   =       1.00          0.78           0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0393)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0091     0.0347
                          0.0010     0.0091   |   0.2700     0.0348
                          0.0090     0.0092   |   0.2710     0.0538

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0396)      1.813      0.561      1.33      54.77
   OUTFLOW: ID= 1 (  0393)      1.813      0.270      1.42      49.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 48.22
                  TIME SHIFT OF PEAK FLOW         (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0429

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--------------------
| ADD HYD  (  0392)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0393):     1.81   0.270     1.42    49.79
     + ID2= 2 (  0394):     0.09   0.019     1.33    47.04
       ==========================================
       ID = 3 (  0392):     1.90   0.289     1.33    49.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0392)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0392):     1.90   0.289     1.33    49.66
     + ID2= 2 (  0395):     0.16   0.051     1.33    54.75
       ==========================================
       ID = 1 (  0392):     2.06   0.340     1.33    50.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
              0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
              0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
              0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
              0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
              1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53

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--------------------
| CALIB            |
| STANDHYD (  0397)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63          0.18
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     109.94         40.00
     Mannings n            =      0.013         0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
              TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
               hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
             0.083    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
             0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
             0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
             0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
             0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
             0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
             0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
             0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
             0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
             0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
             0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
             1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)         5.00         10.00
     Storage Coeff.  (min)=       2.53 (ii)    5.28 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.29          0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.53          0.04          0.561 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.42           1.33
     RUNOFF VOLUME    (mm)=      56.03         43.45          54.77
     TOTAL RAINFALL   (mm)=      56.03         56.03          56.03
     RUNOFF COEFFICIENT   =       1.00          0.78           0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0399)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0211     0.0273
                          0.0010     0.0091   |   0.2700     0.0274
                          0.0210     0.0092   |   0.2710     0.0474

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0397)      1.813      0.561      1.33      54.77
   OUTFLOW: ID= 1 (  0399)      1.813      0.271      1.42      49.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 48.24
                  TIME SHIFT OF PEAK FLOW         (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0383

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
                0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
                0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
                0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
                0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
                1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.14          0.02
     Dep. Storage     (mm)=        0.00          0.00
     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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
               0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
               0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
               0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
               0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
               0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
               0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
               0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
               0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
               0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
               0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
               1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)         5.00          5.00
     Storage Coeff.  (min)=       1.22 (ii)     3.97 (ii)
     Unit Hyd. Tpeak (min)=       5.00          5.00
     Unit Hyd. peak  (cms)=       0.33          0.24
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.05          0.00          0.051 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.33           1.33
     RUNOFF VOLUME    (mm)=      56.03         43.45          54.75
     TOTAL RAINFALL   (mm)=      56.03         56.03          56.03
     RUNOFF COEFFICIENT   =       1.00          0.78           0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
                0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
                0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
                0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
                0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
                1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.03          0.06
     Dep. Storage     (mm)=        0.00          0.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       24.49         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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
               0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
               0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
               0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
               0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
               0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
               0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
               0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
               0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
               0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
               0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
               1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)         5.00          10.00
     Storage Coeff.  (min)=       1.03 (ii)     8.25 (ii)
     Unit Hyd. Tpeak (min)=       5.00          10.00
     Unit Hyd. peak  (cms)=       0.34          0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01          0.01          0.019 (iii)
     TIME TO PEAK    (hrs)=       1.33          1.42           1.33
     RUNOFF VOLUME    (mm)=      56.03         43.45          47.04
     TOTAL RAINFALL   (mm)=      56.03         56.03          56.03
     RUNOFF COEFFICIENT   =       1.00          0.78           0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 1 (  0398):      0.16    0.051     1.33     54.75
     + ID2= 2 (  0399):      1.81    0.271     1.42     49.79
       ================================================
       ID = 3 (  0401):      1.97    0.321     1.33     50.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 3 (  0401):      1.97    0.321     1.33     50.18
     + ID2= 2 (  0400):      0.09    0.019     1.33     47.04
       ================================================
       ID = 1 (  0401):      2.06    0.340     1.33     50.04
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0402)	ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

				TOTALS
Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		1.03 (ii)	8.25 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.13	
PEAK FLOW	(cms)=	0.01	0.01	0.019 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	47.04
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0404)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

				TOTALS
Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.22 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.24	
PEAK FLOW	(cms)=	0.05	0.00	0.051 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.75
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

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--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63          0.18
     Dep. Storage     (mm)=      0.00          0.00
     Average Slope     (%)=      1.00          2.00
     Length            (m)=    109.94         40.00
     Mannings n             =     0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)          5.00         10.00
     Storage Coeff.  (min)=      2.53 (ii)     5.28 (ii)
     Unit Hyd. Tpeak (min)=      5.00         10.00
     Unit Hyd. peak  (cms)=      0.29          0.16
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.53          0.04          0.561 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42          1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45         54.77
     TOTAL RAINFALL   (mm)=     56.03         56.03         56.03
     RUNOFF COEFFICIENT   =      1.00          0.78          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)     1.813     0.561      1.33      54.77
   OUTFLOW: ID= 1 (  0405)     1.813     0.271      1.42      49.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 48.25
                  TIME SHIFT OF PEAK FLOW         (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0271

--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.019     1.33    47.04
     + ID2= 2 (  0404):     0.16   0.051     1.33    54.75
       ========================================================
       ID = 3 (  0403):     0.25   0.070     1.33    51.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.070     1.33    51.98
     + ID2= 2 (  0405):     1.81   0.271     1.42    49.79
       ========================================================
       ID = 1 (  0403):     2.06   0.340     1.33    50.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53

--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03          0.06
     Dep. Storage     (mm)=      0.00          0.00
     Average Slope     (%)=      1.00          2.00
     Length            (m)=     24.49         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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)          5.00         10.00
     Storage Coeff.  (min)=      1.03 (ii)     8.25 (ii)
     Unit Hyd. Tpeak (min)=      5.00         10.00
     Unit Hyd. peak  (cms)=      0.34          0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.01          0.01          0.019 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42          1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45         47.04
     TOTAL RAINFALL   (mm)=     56.03         56.03         56.03
     RUNOFF COEFFICIENT   =      1.00          0.78          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
```

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

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0410)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

				TOTALS
Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.53 (ii)	5.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.29	0.16	
PEAK FLOW	(cms)=	0.53	0.04	0.561 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.77
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0408)	IN= 2---> OUT= 1	DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0022	0.0151
0.0010	0.0091	0.2700	0.0152
0.0021	0.0092	0.2710	0.0376

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0410)	1.813	0.561	1.33	54.77
OUTFLOW: ID= 1 (0408)	1.813	0.271	1.42	49.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 48.25
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0292

CHICAGO STORM	Ptotal= 56.03 mm

IDF curve parameters: A= 926.900
B= 5.000
C= 0.762
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.04	1.17	28.70	2.17	9.15	3.17	4.77
0.33	4.60	1.33	117.72	2.33	7.85	3.33	4.44
0.50	5.37	1.50	37.22	2.50	6.90	3.50	4.16
0.67	6.54	1.67	20.22	2.67	6.18	3.67	3.92
0.83	8.49	1.83	14.18	2.83	5.61	3.83	3.71
1.00	12.61	2.00	11.07	3.00	5.15	4.00	3.53

CALIB	STANDHYD (0411)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.04	1.083	28.70	2.083	9.15	3.08	4.77
0.167	4.04	1.167	28.70	2.167	9.15	3.17	4.77
0.250	4.60	1.250	117.72	2.250	7.85	3.25	4.44
0.333	4.60	1.333	117.72	2.333	7.85	3.33	4.44
0.417	5.37	1.417	37.22	2.417	6.90	3.42	4.16
0.500	5.37	1.500	37.22	2.500	6.90	3.50	4.16
0.583	6.54	1.583	20.22	2.583	6.18	3.58	3.92
0.667	6.54	1.667	20.22	2.667	6.18	3.67	3.92
0.750	8.49	1.750	14.18	2.750	5.61	3.75	3.71
0.833	8.49	1.833	14.18	2.833	5.61	3.83	3.71
0.917	12.61	1.917	11.07	2.917	5.15	3.92	3.53
1.000	12.61	2.000	11.07	3.000	5.15	4.00	3.53

				TOTALS
Max.Eff.Inten.(mm/hr)=		117.72	94.43	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.22 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.24	
PEAK FLOW	(cms)=	0.05	0.00	0.051 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	56.03	43.45	54.75
TOTAL RAINFALL	(mm)=	56.03	56.03	56.03
RUNOFF COEFFICIENT	=	1.00	0.78	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.019     1.33    47.04
     + ID2= 2 (  0408):     1.81   0.271     1.42    49.79
       ================================================
       ID = 3 (  0409):     1.90   0.289     1.33    49.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.289     1.33    49.66
     + ID2= 2 (  0411):     0.16   0.051     1.33    54.75
       ================================================
       ID = 1 (  0409):     2.06   0.340     1.33    50.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
                0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
                0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
                0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
                0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
                1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.14           0.02
     Dep. Storage     (mm)=         0.00           0.00
     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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
               0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
               0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
               0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
               0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
               0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
               0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
               0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
               0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
               0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
               0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
               1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)        5.00          5.00
     Storage Coeff.  (min)=      1.22 (ii)     3.97 (ii)
     Unit Hyd. Tpeak (min)=      5.00          5.00
     Unit Hyd. peak  (cms)=      0.33          0.24
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.05          0.00      0.051 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.33       1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45      54.75
     TOTAL RAINFALL   (mm)=     56.03         56.03      56.03
     RUNOFF COEFFICIENT   =      1.00          0.78       0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
                0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
                0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
                0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
                0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
                1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         1.63           0.18
     Dep. Storage     (mm)=         0.00           0.00
     Average Slope     (%)=         1.00           2.00
     Length            (m)=       109.94          40.00
     Mannings n             =       0.013          0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
               0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
               0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
               0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
               0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
               0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
               0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
               0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
               0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
               0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
               0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
               1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72         94.43
               over (min)        5.00          10.00
     Storage Coeff.  (min)=      2.53 (ii)     5.28 (ii)
     Unit Hyd. Tpeak (min)=      5.00          10.00
     Unit Hyd. peak  (cms)=      0.29          0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.53          0.04      0.561 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42       1.33
     RUNOFF VOLUME    (mm)=     56.03         43.45      54.77
     TOTAL RAINFALL   (mm)=     56.03         56.03      56.03
     RUNOFF COEFFICIENT   =      1.00          0.78       0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
        CN*  =  94.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0012     0.0160
                          0.0010     0.0091   |   0.2700     0.0161
                          0.0011     0.0092   |   0.2710     0.0387

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)     1.813     0.561      1.33      54.77
   OUTFLOW: ID= 1 (  0417)     1.813     0.271      1.42      49.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 48.25
                  TIME SHIFT OF PEAK FLOW          (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0302

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 926.900
| Ptotal= 56.03 mm |                          B=   5.000
--------------------                          C=   0.762
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.04 |  1.17   28.70 |  2.17    9.15 |  3.17    4.77
               0.33    4.60 |  1.33  117.72 |  2.33    7.85 |  3.33    4.44
               0.50    5.37 |  1.50   37.22 |  2.50    6.90 |  3.50    4.16
               0.67    6.54 |  1.67   20.22 |  2.67    6.18 |  3.67    3.92
               0.83    8.49 |  1.83   14.18 |  2.83    5.61 |  3.83    3.71
               1.00   12.61 |  2.00   11.07 |  3.00    5.15 |  4.00    3.53


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--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    4.04 | 1.083   28.70 | 2.083    9.15 |  3.08    4.77
              0.167    4.04 | 1.167   28.70 | 2.167    9.15 |  3.17    4.77
              0.250    4.60 | 1.250  117.72 | 2.250    7.85 |  3.25    4.44
              0.333    4.60 | 1.333  117.72 | 2.333    7.85 |  3.33    4.44
              0.417    5.37 | 1.417   37.22 | 2.417    6.90 |  3.42    4.16
              0.500    5.37 | 1.500   37.22 | 2.500    6.90 |  3.50    4.16
              0.583    6.54 | 1.583   20.22 | 2.583    6.18 |  3.58    3.92
              0.667    6.54 | 1.667   20.22 | 2.667    6.18 |  3.67    3.92
              0.750    8.49 | 1.750   14.18 | 2.750    5.61 |  3.75    3.71
              0.833    8.49 | 1.833   14.18 | 2.833    5.61 |  3.83    3.71
              0.917   12.61 | 1.917   11.07 | 2.917    5.15 |  3.92    3.53
              1.000   12.61 | 2.000   11.07 | 3.000    5.15 |  4.00    3.53

     Max.Eff.Inten.(mm/hr)=     117.72        94.43
               over (min)          5.00        10.00
     Storage Coeff.  (min)=       1.03 (ii)    8.25 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.019 (iii)

     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      56.03        43.45         47.04
     TOTAL RAINFALL   (mm)=      56.03        56.03         56.03
     RUNOFF COEFFICIENT   =       1.00         0.78          0.84

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):     1.81   0.271     1.42    49.79
      + ID2= 2 (  0419):     0.16   0.051     1.33    54.75
        ================================================
        ID = 3 (  0418):     1.97   0.322     1.33    50.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):     1.97   0.322     1.33    50.18
      + ID2= 2 (  0421):     0.09   0.019     1.33    47.04
        ================================================
        ID = 1 (  0418):     2.06   0.340     1.33    50.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

```
V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
Output filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\d01a917d-e
Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\d01a917d-e

DATE: 02-13-2019 TIME: 09:45:49

USER:

COMMENTS: _____

****
** SIMULATION : 8__50-Year - City of Burlingt **
****

| CHICAGO STORM | Ptotal= 61.96 mm |

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0358)	ID= 1 DT= 5.0 min	Area (ha)= 1.81	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.30	0.16	
PEAK FLOW	(cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.67
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0361) | IN= 2---> OUT= 1 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3120	0.0220
0.3110	0.0010	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0358)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0361)	1.813	0.312	1.42	60.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 50.16
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0169

| CHICAGO STORM | Ptotal= 61.96 mm |

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0375)	ID= 1 DT= 5.0 min	Area (ha)= 0.16	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.18 (ii)	3.82 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.25	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.00	0.057 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.66
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0361):		1.81	0.312	1.42	60.68
+ ID2= 2 (0375):		0.16	0.057	1.33	60.66
ID = 3 (0377):		1.97	0.368	1.33	60.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM
Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB
STANDHYD (0382)
ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.30	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.67
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.2700	0.0092
0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0381)	1.813	0.271	1.43	55.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.57
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0271

CHICAGO STORM
Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB
STANDHYD (0383)
ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00

```
     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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
               0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
               0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
               0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
               0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
               0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
               0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
               0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
               0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
               0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
               0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
               1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
           over (min)           5.00         5.00
     Storage Coeff.  (min)=     1.18 (ii)    3.82 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.33         0.25
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.05         0.00          0.057 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=    61.96        49.11         60.66
     TOTAL RAINFALL   (mm)=    61.96        61.96         61.96
     RUNOFF COEFFICIENT   =     1.00         0.79          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17     4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33     5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50     5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67     7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83     9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00    13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0385)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
               0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
               0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
               0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
               0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
               0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
               0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
               0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
               0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
               0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
               0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
               1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
           over (min)           5.00         10.00
     Storage Coeff.  (min)=     0.99 (ii)    7.86 (ii)
     Unit Hyd. Tpeak (min)=     5.00         10.00
     Unit Hyd. peak  (cms)=     0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.01         0.01          0.021 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=    61.96        49.11         52.78
     TOTAL RAINFALL   (mm)=    61.96        61.96         61.96
     RUNOFF COEFFICIENT   =     1.00         0.79          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0    Ia = Dep. 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  (  0384)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0381):      1.81    0.271     1.43    55.69
     + ID2= 2 (  0383):      0.16    0.057     1.33    60.66
       ==========================================================
       ID = 3 (  0384):      1.97    0.327     1.33    56.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0384)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0384):      1.97    0.327     1.33    56.08
     + ID2= 2 (  0385):      0.09    0.021     1.33    52.78
       ==========================================================
       ID = 1 (  0384):      2.06    0.348     1.33    55.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17     4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33     5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50     5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67     7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83     9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00    13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0341)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
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--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.16         0.00
     Dep. Storage     (mm)=      0.00         0.00
     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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.18 (ii)    2.19 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.31
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.06         0.00      0.058 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     61.96        49.11      61.82
     TOTAL RAINFALL   (mm)=     61.96        61.96      61.96
     RUNOFF COEFFICIENT   =      1.00         0.79       1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0343)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.79         0.02
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      2.44 (ii)    3.45 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.30         0.26
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.64         0.01      0.644 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     61.96        49.11      61.83
     TOTAL RAINFALL   (mm)=     61.96        61.96      61.96
     RUNOFF COEFFICIENT   =      1.00         0.79       1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0380)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
```

0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	10.00	
Storage Coeff. (min)=	0.99 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.021 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	52.78
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0341):	0.16	0.058	1.33	61.82	
+ ID2= 2 (0343):	1.81	0.644	1.33	61.83	
ID = 3 (0386):	1.97	0.702	1.33	61.83	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0386):	1.97	0.702	1.33	61.83	
+ ID2= 2 (0380):	0.09	0.021	1.33	52.78	
ID = 1 (0386):	2.06	0.723	1.33	61.43	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1019.400
Ptotal= 61.96 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB			
STANDHYD (0388)	Area (ha)=	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.18 (ii)	3.82 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.25	
			TOTALS
PEAK FLOW (cms)=	0.05	0.00	0.057 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	60.66
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters: A=1019.400
Ptotal= 61.96 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB			
STANDHYD (0389)	Area (ha)=	1.81	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93

0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.16	
			TOTALS
PEAK FLOW (cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	60.67
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0387)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0041	0.0395
	0.0010	0.0091	0.2700	0.0395
	0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0387)	1.813	0.271	1.43	55.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.56
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0495

CHICAGO STORM	IDF curve parameters: A=1019.400
Ptotal= 61.96 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB		
STANDHYD (0391)	Area (ha)=	0.09
ID= 1 DT= 5.0 min	Total Imp(%)=	29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	10.00	
Storage Coeff. (min)=	0.99 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.021 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	52.78
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.271	1.43	55.69
+ ID2= 2 (0388):	0.16	0.057	1.33	60.66
ID = 3 (0390):	1.97	0.327	1.33	56.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.327	1.33	56.08
+ ID2= 2 (0391):	0.09	0.021	1.33	52.78
ID = 1 (0390):	2.06	0.348	1.33	55.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1019.400
Ptotal= 61.96 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

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| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     0.99 (ii)    7.86 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.01         0.01          0.021 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=    61.96        49.11         52.78
     TOTAL RAINFALL   (mm)=    61.96        61.96         61.96
     RUNOFF COEFFICIENT   =     1.00         0.79          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         5.00
     Storage Coeff.  (min)=     1.18 (ii)    3.82 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.33         0.25
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.05         0.00          0.057 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=    61.96        49.11         60.66
     TOTAL RAINFALL   (mm)=    61.96        61.96         61.96
     RUNOFF COEFFICIENT   =     1.00         0.79          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. 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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--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n           =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
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0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.16	
			TOTALS
PEAK FLOW (cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	60.67
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0393)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0091	0.0347
	0.0010	0.0091	0.2700	0.0348
	0.0090	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0396)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0393)	1.813	0.271	1.43	55.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.55
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0466

ADD HYD (0392)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0393):	1.81	0.271	1.43	55.69
	+ ID2= 2 (0394):	0.09	0.021	1.33	52.78
	ID = 3 (0392):	1.90	0.292	1.33	55.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0392)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0392):	1.90	0.292	1.33	55.55
	+ ID2= 2 (0395):	0.16	0.057	1.33	60.66
	ID = 1 (0392):	2.06	0.348	1.33	55.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1019.400
Ptotal= 61.96 mm	B= 5.000
	C= 0.761
	used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min

Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB			
STANDHYD (0397)	Area (ha)=	1.81	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

Max.Eff.Inten.(mm/hr)=	129.82	106.83	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.16	
			TOTALS
PEAK FLOW (cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	61.96	49.11	60.67
TOTAL RAINFALL (mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT =	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0399)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0211	0.0273
	0.0010	0.0091	0.2700	0.0274
	0.0210	0.0092	0.2710	0.0474

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0397)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0399)	1.813	0.271	1.43	55.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.57
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0424

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| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


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| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.14          0.02
     Dep. Storage     (mm)=         0.00          0.00
     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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
               0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
               0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
               0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
               0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
               0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
               0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
               0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
               0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
               0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
               0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
               1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.18 (ii)    3.82 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.25
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.05         0.00        0.057 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33         1.33
     RUNOFF VOLUME    (mm)=     61.96        49.11        60.66
     TOTAL RAINFALL   (mm)=     61.96        61.96        61.96
     RUNOFF COEFFICIENT   =      1.00         0.79         0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.03          0.06
     Dep. Storage     (mm)=         0.00          0.00
     Average Slope     (%)=         1.00          2.00
     Length            (m)=        24.49         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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
               0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
               0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
               0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
               0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
               0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
               0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
               0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
               0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
               0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
               0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
               1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         10.00
     Storage Coeff.  (min)=      0.99 (ii)    7.86 (ii)
     Unit Hyd. Tpeak (min)=      5.00         10.00
     Unit Hyd. peak  (cms)=      0.34         0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.01         0.021 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=     61.96        49.11         52.78
     TOTAL RAINFALL   (mm)=     61.96        61.96         61.96
     RUNOFF COEFFICIENT   =      1.00         0.79          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 1 (  0398):      0.16    0.057     1.33     60.66
     + ID2= 2 (  0399):      1.81    0.271     1.43     55.69
       ================================================
       ID = 3 (  0401):      1.97    0.327     1.33     56.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 3 (  0401):      1.97    0.327     1.33     56.08
     + ID2= 2 (  0400):      0.09    0.021     1.33     52.78
       ================================================
       ID = 1 (  0401):      2.06    0.348     1.33     55.93
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0402)	ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	10.00	
Storage Coeff. (min)=		0.99 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.13	
PEAK FLOW	(cms)=	0.01	0.01	0.021 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	52.78
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0404)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.18 (ii)	3.82 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.25	
PEAK FLOW	(cms)=	0.05	0.00	0.057 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.66
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

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--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n             =      0.013        0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)          5.00        10.00
     Storage Coeff.  (min)=       2.44 (ii)    5.08 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.30         0.16
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.58         0.04          0.621 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      61.96        49.11         60.67
     TOTAL RAINFALL   (mm)=      61.96        61.96         61.96
     RUNOFF COEFFICIENT   =       1.00         0.79          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)     1.813     0.621      1.33      60.67
   OUTFLOW: ID= 1 (  0405)     1.813     0.271      1.43      55.69

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)= 43.57
                 TIME SHIFT OF PEAK FLOW         (min)=  6.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0310

--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.021     1.33    52.78
     + ID2= 2 (  0404):     0.16   0.057     1.33    60.66
       ========================================================
       ID = 3 (  0403):     0.25   0.078     1.33    57.82
```

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

--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.078     1.33    57.82
     + ID2= 2 (  0405):     1.81   0.271     1.43    55.69
       ========================================================
       ID = 1 (  0403):     2.06   0.348     1.33    55.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91

--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)          5.00        10.00
     Storage Coeff.  (min)=       0.99 (ii)    7.86 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.021 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      61.96        49.11         52.78
     TOTAL RAINFALL   (mm)=      61.96        61.96         61.96
     RUNOFF COEFFICIENT   =       1.00         0.79          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
```

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

CHICAGO STORM	Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0410)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.44 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.30	0.16	
PEAK FLOW	(cms)=	0.58	0.04	0.621 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.67
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0408)	IN= 2---> OUT= 1	DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0022	0.0151
0.0010	0.0091	0.2700	0.0152
0.0021	0.0092	0.2710	0.0376

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0410)	1.813	0.621	1.33	60.67
OUTFLOW: ID= 1 (0408)	1.813	0.271	1.43	55.69

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.57
TIME SHIFT OF PEAK FLOW (min)= 6.00
MAXIMUM STORAGE USED (ha.m.)= 0.0330

CHICAGO STORM	Ptotal= 61.96 mm

IDF curve parameters: A=1019.400
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.48	1.17	31.74	2.17	10.15	3.17	5.29
0.33	5.10	1.33	129.82	2.33	8.70	3.33	4.93
0.50	5.96	1.50	41.13	2.50	7.66	3.50	4.62
0.67	7.25	1.67	22.38	2.67	6.86	3.67	4.35
0.83	9.41	1.83	15.71	2.83	6.23	3.83	4.12
1.00	13.97	2.00	12.26	3.00	5.71	4.00	3.91

CALIB	STANDHYD (0411)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.48	1.083	31.74	2.083	10.15	3.08	5.29
0.167	4.48	1.167	31.74	2.167	10.15	3.17	5.29
0.250	5.10	1.250	129.82	2.250	8.70	3.25	4.93
0.333	5.10	1.333	129.82	2.333	8.70	3.33	4.93
0.417	5.96	1.417	41.13	2.417	7.66	3.42	4.62
0.500	5.96	1.500	41.13	2.500	7.66	3.50	4.62
0.583	7.25	1.583	22.38	2.583	6.86	3.58	4.35
0.667	7.25	1.667	22.38	2.667	6.86	3.67	4.35
0.750	9.41	1.750	15.71	2.750	6.23	3.75	4.12
0.833	9.41	1.833	15.71	2.833	6.23	3.83	4.12
0.917	13.97	1.917	12.26	2.917	5.71	3.92	3.91
1.000	13.97	2.000	12.26	3.000	5.71	4.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		129.82	106.83	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.18 (ii)	3.82 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.33	0.25	
PEAK FLOW	(cms)=	0.05	0.00	0.057 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	61.96	49.11	60.66
TOTAL RAINFALL	(mm)=	61.96	61.96	61.96
RUNOFF COEFFICIENT	=	1.00	0.79	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.021     1.33    52.78
     + ID2= 2 (  0408):     1.81   0.271     1.43    55.69
       ================================================
       ID = 3 (  0409):     1.90   0.292     1.33    55.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.292     1.33    55.55
     + ID2= 2 (  0411):     0.16   0.057     1.33    60.66
       ================================================
       ID = 1 (  0409):     2.06   0.348     1.33    55.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.14           0.02
     Dep. Storage     (mm)=         0.00           0.00
     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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.18 (ii)    3.82 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.33         0.25
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.05         0.00        0.057 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33         1.33
     RUNOFF VOLUME    (mm)=     61.96        49.11        60.66
     TOTAL RAINFALL   (mm)=     61.96        61.96        61.96
     RUNOFF COEFFICIENT   =      1.00         0.79         0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         1.63           0.18
     Dep. Storage     (mm)=         0.00           0.00
     Average Slope     (%)=         1.00           2.00
     Length            (m)=       109.94          40.00
     Mannings n             =       0.013          0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)        5.00         10.00
     Storage Coeff.  (min)=      2.44 (ii)    5.08 (ii)
     Unit Hyd. Tpeak (min)=      5.00         10.00
     Unit Hyd. peak  (cms)=      0.30          0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.58          0.04        0.621 (iii)
     TIME TO PEAK    (hrs)=      1.33          1.42         1.33
     RUNOFF VOLUME    (mm)=     61.96         49.11        60.67
     TOTAL RAINFALL   (mm)=     61.96         61.96        61.96
     RUNOFF COEFFICIENT   =      1.00          0.79         0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0012     0.0160
                          0.0010     0.0091   |   0.2700     0.0161
                          0.0011     0.0092   |   0.2710     0.0387

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)      1.813     0.621      1.33      60.67
   OUTFLOW: ID= 1 (  0417)      1.813     0.271      1.43      55.69

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 43.57
                  TIME SHIFT OF PEAK FLOW         (min)=  6.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0340

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1019.400
| Ptotal= 61.96 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.48 |  1.17   31.74 |  2.17   10.15 |  3.17    5.29
               0.33    5.10 |  1.33  129.82 |  2.33    8.70 |  3.33    4.93
               0.50    5.96 |  1.50   41.13 |  2.50    7.66 |  3.50    4.62
               0.67    7.25 |  1.67   22.38 |  2.67    6.86 |  3.67    4.35
               0.83    9.41 |  1.83   15.71 |  2.83    6.23 |  3.83    4.12
               1.00   13.97 |  2.00   12.26 |  3.00    5.71 |  4.00    3.91


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    4.48 | 1.083   31.74 | 2.083   10.15 |  3.08    5.29
              0.167    4.48 | 1.167   31.74 | 2.167   10.15 |  3.17    5.29
              0.250    5.10 | 1.250  129.82 | 2.250    8.70 |  3.25    4.93
              0.333    5.10 | 1.333  129.82 | 2.333    8.70 |  3.33    4.93
              0.417    5.96 | 1.417   41.13 | 2.417    7.66 |  3.42    4.62
              0.500    5.96 | 1.500   41.13 | 2.500    7.66 |  3.50    4.62
              0.583    7.25 | 1.583   22.38 | 2.583    6.86 |  3.58    4.35
              0.667    7.25 | 1.667   22.38 | 2.667    6.86 |  3.67    4.35
              0.750    9.41 | 1.750   15.71 | 2.750    6.23 |  3.75    4.12
              0.833    9.41 | 1.833   15.71 | 2.833    6.23 |  3.83    4.12
              0.917   13.97 | 1.917   12.26 | 2.917    5.71 |  3.92    3.91
              1.000   13.97 | 2.000   12.26 | 3.000    5.71 |  4.00    3.91

     Max.Eff.Inten.(mm/hr)=     129.82       106.83
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       0.99 (ii)    7.86 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.021 (iii)

     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      61.96        49.11         52.78
     TOTAL RAINFALL   (mm)=      61.96        61.96         61.96
     RUNOFF COEFFICIENT   =       1.00         0.79          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):      1.81    0.271    1.43     55.69
      + ID2= 2 (  0419):      0.16    0.057    1.33     60.66
        ================================================
        ID = 3 (  0418):      1.97    0.327    1.33     56.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):      1.97    0.327    1.33     56.08
      + ID2= 2 (  0421):      0.09    0.021    1.33     52.78
        ================================================
        ID = 1 (  0418):      2.06    0.348    1.33     55.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

```
V    V   I    SSSSS  U   U    A    L              (v 5.1.2003)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat
Output filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\48e7d4ff-3
Summary filename: C:\Users\lmaruska\AppData\Local\Civica\VH5\0c0133bc-e9c3-42f8-8872-d355d58e7375\48e7d4ff-3

DATE: 02-13-2019 TIME: 09:45:49

USER:

COMMENTS: _____

** SIMULATION : 9__100-Year - City of Burling **

| CHICAGO STORM | Ptotal= 67.72 mm |

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

| CALIB | STANDHYD (0358) | ID= 1 DT= 5.0 min |

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

			TOTALS
Max.Eff.Inten.(mm/hr)=	141.89	119.20	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.22	
PEAK FLOW (cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	67.72	54.64	66.41
TOTAL RAINFALL (mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT =	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0361) | IN= 2---> OUT= 1 | DT= 5.0 min |

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3120	0.0220
	0.3110	0.0010	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0358)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0361)	1.813	0.312	1.42	66.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.14
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0212

| CHICAGO STORM | Ptotal= 67.72 mm |

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

| CALIB | STANDHYD (0375) | ID= 1 DT= 5.0 min |

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.13 (ii)	3.68 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.34	0.25	
				TOTALS
PEAK FLOW	(cms)=	0.06	0.01	0.062 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.40
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0377)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0361):		1.81	0.312	1.42	66.42
+ ID2= 2 (0375):		0.16	0.062	1.33	66.40
ID = 3 (0377):		1.97	0.374	1.33	66.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM
Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB
STANDHYD (0382)
ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.41
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0381)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.2700	0.0092
0.0010	0.0091	0.2710	0.0320

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0382)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0381)	1.813	0.271	1.45	61.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.21
TIME SHIFT OF PEAK FLOW (min)= 7.00
MAXIMUM STORAGE USED (ha.m.)= 0.0317

CHICAGO STORM
Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB
STANDHYD (0383)
ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00

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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.13 (ii)	3.68 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.34	0.25	
				TOTALS
PEAK FLOW	(cms)=	0.06	0.01	0.062 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.40
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	
Ptotal= 67.72 mm	

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB		
STANDHYD (0385)	Area (ha)=	0.09
ID= 1 DT= 5.0 min	Total Imp(%)=	29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	10.00	
Storage Coeff. (min)=		0.95 (ii)	7.53 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.01	0.024 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	58.38
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0381):	1.81	0.271	1.45	61.43
	+ ID2= 2 (0383):	0.16	0.062	1.33	66.40
	ID = 3 (0384):	1.97	0.333	1.33	61.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0384)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0384):	1.97	0.333	1.33	61.82
	+ ID2= 2 (0385):	0.09	0.024	1.33	58.38
	ID = 1 (0384):	2.06	0.356	1.33	61.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	
Ptotal= 67.72 mm	

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB		
STANDHYD (0341)	Area (ha)=	0.16
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

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                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.16          0.00
     Dep. Storage     (mm)=        0.00          0.00
     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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.13 (ii)    2.11 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.34         0.31
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.00          0.063 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      67.72        54.64          67.58
     TOTAL RAINFALL   (mm)=      67.72        67.72          67.72
     RUNOFF COEFFICIENT   =       1.00         0.81           1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
               0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
               0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
               0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
               0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
               1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


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| CALIB            |
| STANDHYD (  0343)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.79          0.02
     Dep. Storage     (mm)=        0.00          0.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=      109.94         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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.35 (ii)    3.33 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.30         0.26
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.70         0.01          0.706 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      67.72        54.64          67.59
     TOTAL RAINFALL   (mm)=      67.72        67.72          67.72
     RUNOFF COEFFICIENT   =       1.00         0.81           1.00

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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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| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
               0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
               0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
               0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
               0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
               1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


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| CALIB            |
| STANDHYD (  0380)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.03          0.06
     Dep. Storage     (mm)=        0.00          0.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       24.49         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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
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0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=	141.89	119.20	
over (min)	5.00	10.00	
Storage Coeff. (min)=	0.95 (ii)	7.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.024 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	67.72	54.64	58.38
TOTAL RAINFALL (mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT =	1.00	0.81	0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0386)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0341):	0.16	0.063	1.33	67.58
+ ID2= 2 (0343):	1.81	0.706	1.33	67.59
ID = 3 (0386):	1.97	0.769	1.33	67.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0386)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0386):	1.97	0.769	1.33	67.59
+ ID2= 2 (0380):	0.09	0.024	1.33	58.38
ID = 1 (0386):	2.06	0.793	1.33	67.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1114.200
Ptotal= 67.72 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB		
STANDHYD (0388)	Area (ha)= 0.16	
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=	141.89	119.20	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.13 (ii)	3.68 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.34	0.25	
			TOTALS
PEAK FLOW (cms)=	0.06	0.01	0.062 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	67.72	54.64	66.40
TOTAL RAINFALL (mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT =	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	IDF curve parameters: A=1114.200
Ptotal= 67.72 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB		
STANDHYD (0389)	Area (ha)= 1.81	
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39

0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=	141.89	119.20	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.22	
			TOTALS
PEAK FLOW (cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	67.72	54.64	66.41
TOTAL RAINFALL (mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT =	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0387)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0041	0.0395
	0.0010	0.0091	0.2700	0.0395
	0.0040	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0389)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0387)	1.813	0.271	1.45	61.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.21
TIME SHIFT OF PEAK FLOW (min)= 7.00
MAXIMUM STORAGE USED (ha.m.)= 0.0537

CHICAGO STORM	IDF curve parameters: A=1114.200
Ptotal= 67.72 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB		
STANDHYD (0391)	Area (ha)=	0.09
ID= 1 DT= 5.0 min	Total Imp(%)=	29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=	141.89	119.20	
over (min)	5.00	10.00	
Storage Coeff. (min)=	0.95 (ii)	7.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.34	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.01	0.024 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	67.72	54.64	58.38
TOTAL RAINFALL (mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT =	1.00	0.81	0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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 (0390)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0387):	1.81	0.271	1.45	61.43
+ ID2= 2 (0388):	0.16	0.062	1.33	66.40
ID = 3 (0390):	1.97	0.332	1.33	61.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0390)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0390):	1.97	0.332	1.33	61.82
+ ID2= 2 (0391):	0.09	0.024	1.33	58.38
ID = 1 (0390):	2.06	0.356	1.33	61.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1114.200
Ptotal= 67.72 mm	B= 5.000
	C= 0.761

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

```
--------------------
| CALIB            |
| STANDHYD (  0394)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.03         0.06
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     24.49        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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     0.95 (ii)    7.53 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.01         0.01          0.024 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=    67.72        54.64         58.38
     TOTAL RAINFALL   (mm)=    67.72        67.72         67.72
     RUNOFF COEFFICIENT   =     1.00         0.81          0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.17     4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
              0.33     5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
              0.50     6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
              0.67     7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
              0.83    10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
              1.00    15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


--------------------
| CALIB            |
| STANDHYD (  0395)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.02
     Dep. Storage     (mm)=      0.00         0.00
     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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=     1.13 (ii)    3.68 (ii)
     Unit Hyd. Tpeak (min)=     5.00         5.00
     Unit Hyd. peak  (cms)=     0.34         0.25
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.06         0.01          0.062 (iii)
     TIME TO PEAK    (hrs)=     1.33         1.33          1.33
     RUNOFF VOLUME    (mm)=    67.72        54.64         66.40
     TOTAL RAINFALL   (mm)=    67.72        67.72         67.72
     RUNOFF COEFFICIENT   =     1.00         0.81          0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  94.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.17     4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
              0.33     5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
              0.50     6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
              0.67     7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
              0.83    10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
              1.00    15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


--------------------
| CALIB            |
| STANDHYD (  0396)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.63         0.18
     Dep. Storage     (mm)=      0.00         0.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    109.94        40.00
     Mannings n            =     0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
```

0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.41
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0393)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0091	0.0347
	0.0010	0.0091	0.2700	0.0348
	0.0090	0.0092	0.2710	0.0538

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0396)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0393)	1.813	0.271	1.45	61.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.19
TIME SHIFT OF PEAK FLOW (min)= 7.00
MAXIMUM STORAGE USED (ha.m.)= 0.0511

ADD HYD (0392)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0393):	1.81	0.271	1.45	61.43
+ ID2= 2 (0394):	0.09	0.024	1.33	58.38
ID = 3 (0392):	1.90	0.294	1.33	61.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0392)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0392):	1.90	0.294	1.33	61.29
+ ID2= 2 (0395):	0.16	0.062	1.33	66.40
ID = 1 (0392):	2.06	0.356	1.33	61.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	IDF curve parameters: A=1114.200
Ptotal= 67.72 mm	B= 5.000
	C= 0.761
	used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min

Time to peak ratio = 0.33

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB			
STANDHYD (0397)	Area (ha)=	1.81	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.41
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0399)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0090	0.0211	0.0273
	0.0010	0.0091	0.2700	0.0274
	0.0210	0.0092	0.2710	0.0474

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0397)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0399)	1.813	0.271	1.45	61.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.21
TIME SHIFT OF PEAK FLOW (min)= 7.00
MAXIMUM STORAGE USED (ha.m.)= 0.0474

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| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
                0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
                0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
                0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
                0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
                1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


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| CALIB            |
| STANDHYD (  0398)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.02
     Dep. Storage     (mm)=       0.00          0.00
     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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
               0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
               0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
               0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
               0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
               0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
               0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
               0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
               0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
               0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
               0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
               1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.13 (ii)    3.68 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.34         0.25
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.06         0.01       0.062 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33        1.33
     RUNOFF VOLUME    (mm)=     67.72        54.64       66.40
     TOTAL RAINFALL   (mm)=     67.72        67.72       67.72
     RUNOFF COEFFICIENT   =      1.00         0.81        0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
                0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
                0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
                0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
                0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
                1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0400)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
               0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
               0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
               0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
               0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
               0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
               0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
               0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
               0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
               0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
               0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
               1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         10.00
     Storage Coeff.  (min)=      0.95 (ii)    7.53 (ii)
     Unit Hyd. Tpeak (min)=      5.00         10.00
     Unit Hyd. peak  (cms)=      0.34         0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.01       0.024 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.42        1.33
     RUNOFF VOLUME    (mm)=     67.72        54.64       58.38
     TOTAL RAINFALL   (mm)=     67.72        67.72       67.72
     RUNOFF COEFFICIENT   =      1.00         0.81        0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0    Ia = Dep. 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  (  0401)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0398):     0.16   0.062     1.33    66.40
      + ID2= 2 (  0399):     1.81   0.271     1.45    61.43
        ================================================
        ID = 3 (  0401):     1.97   0.333     1.33    61.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0401)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 3 (  0401):     1.97   0.333     1.33    61.82
      + ID2= 2 (  0400):     0.09   0.024     1.33    58.38
        ================================================
        ID = 1 (  0401):     2.06   0.356     1.33    61.67
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM	Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB	STANDHYD (0402)	ID= 1 DT= 5.0 min

Area (ha)= 0.09
Total Imp(%)= 29.00 Dir. Conn.(%)= 29.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.06
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	24.49	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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	10.00	
Storage Coeff. (min)=		0.95 (ii)	7.53 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.34	0.13	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.01	0.024 (iii)
TIME TO PEAK	(hrs)=	1.33	1.42	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	58.38
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB	STANDHYD (0404)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.13 (ii)	3.68 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.34	0.25	
				TOTALS
PEAK FLOW	(cms)=	0.06	0.01	0.062 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.40
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHICAGO STORM	Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

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--------------------
| CALIB            |
| STANDHYD (  0406)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.63         0.18
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     109.94        40.00
     Mannings n            =      0.013        0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)          5.00         5.00
     Storage Coeff.  (min)=       2.35 (ii)    4.90 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.30         0.22
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.64         0.05          0.691 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      67.72        54.64          66.41
     TOTAL RAINFALL   (mm)=      67.72        67.72          67.72
     RUNOFF COEFFICIENT   =       1.00         0.81           0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| RESERVOIR(  0405)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0051     0.0130
                          0.0010     0.0091   |   0.2700     0.0131
                          0.0050     0.0092   |   0.2710     0.0356

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0406)     1.813     0.691      1.33      66.41
   OUTFLOW: ID= 1 (  0405)     1.813     0.271      1.45      61.43

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)= 39.21
                 TIME SHIFT OF PEAK FLOW         (min)=  7.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0356

--------------------
| ADD HYD  (  0403)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0402):     0.09   0.024     1.33    58.38
     + ID2= 2 (  0404):     0.16   0.062     1.33    66.40
       ========================================================
       ID = 3 (  0403):     0.25   0.086     1.33    63.51
```

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

--------------------
| ADD HYD  (  0403)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0403):     0.25   0.086     1.33    63.51
     + ID2= 2 (  0405):     1.81   0.271     1.45    61.43
       ========================================================
       ID = 1 (  0403):     2.06   0.356     1.33    61.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                         used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
               0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
               0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
               0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
               0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
               1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28

--------------------
| CALIB            |
| STANDHYD (  0407)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03         0.06
     Dep. Storage     (mm)=       0.00         0.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      24.49        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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)          5.00        10.00
     Storage Coeff.  (min)=       0.95 (ii)    7.53 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.024 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.42           1.33
     RUNOFF VOLUME    (mm)=      67.72        54.64          58.38
     TOTAL RAINFALL   (mm)=      67.72        67.72          67.72
     RUNOFF COEFFICIENT   =       1.00         0.81           0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. Storage  (Above)
```

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

CHICAGO STORM	Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB	STANDHYD (0410)	ID= 1 DT= 5.0 min

Area (ha)= 1.81
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.63	0.18
Dep. Storage	(mm)=	0.00	0.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	109.94	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

				TOTALS
Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.35 (ii)	4.90 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.22	
PEAK FLOW	(cms)=	0.64	0.05	0.691 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.41
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0408)	IN= 2---> OUT= 1	DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0090	0.0022	0.0151
0.0010	0.0091	0.2700	0.0152
0.0021	0.0092	0.2710	0.0376

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0410)	1.813	0.691	1.33	66.41
OUTFLOW: ID= 1 (0408)	1.813	0.271	1.45	61.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 39.21
TIME SHIFT OF PEAK FLOW (min)= 7.00
MAXIMUM STORAGE USED (ha.m.)= 0.0376

CHICAGO STORM	Ptotal= 67.72 mm

IDF curve parameters: A=1114.200
B= 5.000
C= 0.761
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.90	1.17	34.69	2.17	11.09	3.17	5.78
0.33	5.58	1.33	141.89	2.33	9.51	3.33	5.39
0.50	6.52	1.50	44.96	2.50	8.37	3.50	5.05
0.67	7.92	1.67	24.46	2.67	7.49	3.67	4.76
0.83	10.29	1.83	17.17	2.83	6.80	3.83	4.50
1.00	15.27	2.00	13.40	3.00	6.24	4.00	4.28

CALIB	STANDHYD (0411)	ID= 1 DT= 5.0 min

Area (ha)= 0.16
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.02
Dep. Storage	(mm)=	0.00	0.00
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	4.90	1.083	34.69	2.083	11.09	3.08	5.78
0.167	4.90	1.167	34.69	2.167	11.09	3.17	5.78
0.250	5.58	1.250	141.89	2.250	9.51	3.25	5.39
0.333	5.58	1.333	141.89	2.333	9.51	3.33	5.39
0.417	6.52	1.417	44.96	2.417	8.37	3.42	5.05
0.500	6.52	1.500	44.96	2.500	8.37	3.50	5.05
0.583	7.92	1.583	24.46	2.583	7.49	3.58	4.76
0.667	7.92	1.667	24.46	2.667	7.49	3.67	4.76
0.750	10.29	1.750	17.17	2.750	6.80	3.75	4.50
0.833	10.29	1.833	17.17	2.833	6.80	3.83	4.50
0.917	15.27	1.917	13.40	2.917	6.24	3.92	4.28
1.000	15.27	2.000	13.40	3.000	6.24	4.00	4.28

				TOTALS
Max.Eff.Inten.(mm/hr)=		141.89	119.20	
over (min)		5.00	5.00	
Storage Coeff. (min)=		1.13 (ii)	3.68 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.34	0.25	
PEAK FLOW	(cms)=	0.06	0.01	0.062 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	67.72	54.64	66.40
TOTAL RAINFALL	(mm)=	67.72	67.72	67.72
RUNOFF COEFFICIENT	=	1.00	0.81	0.98

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 94.0 Ia = Dep. 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  (  0409)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0407):     0.09   0.024     1.33    58.38
     + ID2= 2 (  0408):     1.81   0.271     1.45    61.43
       ================================================
       ID = 3 (  0409):     1.90   0.295     1.33    61.29

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

```
--------------------
| ADD HYD  (  0409)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0409):     1.90   0.295     1.33    61.29
     + ID2= 2 (  0411):     0.16   0.062     1.33    66.40
       ================================================
       ID = 1 (  0409):     2.06   0.356     1.33    61.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
                0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
                0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
                0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
                0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
                1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28
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--------------------
| CALIB            |
| STANDHYD (  0419)|   Area    (ha)=   0.16
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         0.14          0.02
     Dep. Storage     (mm)=         0.00          0.00
     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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
               0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
               0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
               0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
               0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
               0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
               0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
               0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
               0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
               0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
               0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
               1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      1.13 (ii)    3.68 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.34         0.25
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.06         0.01      0.062 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     67.72        54.64      66.40
     TOTAL RAINFALL   (mm)=     67.72        67.72      67.72
     RUNOFF COEFFICIENT   =      1.00         0.81       0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  94.0     Ia = Dep. 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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| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                       used in:   INTENSITY =  A / (t + B)^C

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

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
                0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
                0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
                0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
                0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
                1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28
```

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--------------------
| CALIB            |
| STANDHYD (  0420)|   Area    (ha)=   1.81
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=         1.63          0.18
     Dep. Storage     (mm)=         0.00          0.00
     Average Slope     (%)=         1.00          2.00
     Length            (m)=       109.94         40.00
     Mannings n             =       0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
               0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
               0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
               0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
               0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
               0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
               0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
               0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
               0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
               0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
               0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
               1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)        5.00         5.00
     Storage Coeff.  (min)=      2.35 (ii)    4.90 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.30         0.22
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.64         0.05      0.691 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.33       1.33
     RUNOFF VOLUME    (mm)=     67.72        54.64      66.41
     TOTAL RAINFALL   (mm)=     67.72        67.72      67.72
     RUNOFF COEFFICIENT   =      1.00         0.81       0.98

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  94.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0417)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0090   |   0.0012     0.0160
                          0.0010     0.0091   |   0.2700     0.0161
                          0.0011     0.0092   |   0.2710     0.0387

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0420)      1.813     0.691      1.33      66.41
   OUTFLOW: ID= 1 (  0417)      1.813     0.271      1.45      61.43

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 39.21
                  TIME SHIFT OF PEAK FLOW          (min)=  7.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0386

--------------------------------------------------------------------------------
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1114.200
| Ptotal= 67.72 mm |                          B=   5.000
--------------------                          C=   0.761
                        used in:   INTENSITY =  A / (t + B)^C

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

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.90 |  1.17   34.69 |  2.17   11.09 |  3.17    5.78
               0.33    5.58 |  1.33  141.89 |  2.33    9.51 |  3.33    5.39
               0.50    6.52 |  1.50   44.96 |  2.50    8.37 |  3.50    5.05
               0.67    7.92 |  1.67   24.46 |  2.67    7.49 |  3.67    4.76
               0.83   10.29 |  1.83   17.17 |  2.83    6.80 |  3.83    4.50
               1.00   15.27 |  2.00   13.40 |  3.00    6.24 |  4.00    4.28


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--------------------
| CALIB            |
| STANDHYD (  0421)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  29.00   Dir. Conn.(%)=  29.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.03          0.06
     Dep. Storage     (mm)=       0.00          0.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      24.49         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    4.90 | 1.083   34.69 | 2.083   11.09 |  3.08    5.78
              0.167    4.90 | 1.167   34.69 | 2.167   11.09 |  3.17    5.78
              0.250    5.58 | 1.250  141.89 | 2.250    9.51 |  3.25    5.39
              0.333    5.58 | 1.333  141.89 | 2.333    9.51 |  3.33    5.39
              0.417    6.52 | 1.417   44.96 | 2.417    8.37 |  3.42    5.05
              0.500    6.52 | 1.500   44.96 | 2.500    8.37 |  3.50    5.05
              0.583    7.92 | 1.583   24.46 | 2.583    7.49 |  3.58    4.76
              0.667    7.92 | 1.667   24.46 | 2.667    7.49 |  3.67    4.76
              0.750   10.29 | 1.750   17.17 | 2.750    6.80 |  3.75    4.50
              0.833   10.29 | 1.833   17.17 | 2.833    6.80 |  3.83    4.50
              0.917   15.27 | 1.917   13.40 | 2.917    6.24 |  3.92    4.28
              1.000   15.27 | 2.000   13.40 | 3.000    6.24 |  4.00    4.28

     Max.Eff.Inten.(mm/hr)=     141.89       119.20
               over (min)          5.00        10.00
     Storage Coeff.  (min)=       0.95 (ii)    7.53 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.34         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.024 (iii)

     TIME TO PEAK    (hrs)=       1.33         1.42          1.33
     RUNOFF VOLUME    (mm)=      67.72        54.64         58.38
     TOTAL RAINFALL   (mm)=      67.72        67.72         67.72
     RUNOFF COEFFICIENT   =       1.00         0.81          0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  94.0    Ia = Dep. 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  (  0418)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0417):      1.81   0.271     1.45    61.43
      + ID2= 2 (  0419):      0.16   0.062     1.33    66.40
        ================================================
        ID = 3 (  0418):      1.97   0.333     1.33    61.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD  (  0418)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0418):      1.97   0.333     1.33    61.82
      + ID2= 2 (  0421):      0.09   0.024     1.33    58.38
        ================================================
        ID = 1 (  0418):      2.06   0.356     1.33    61.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

 FINISH
================================================================================================================================
```

Storm Tank Sizing Scenarios

Rain Event		**25 mm**			**10 mm**		
Drawdown Time (hours)		**6**	**12**	**24**	**6**	**12**	**24**
Storage Requirements (m^3)	Sump – 5 mm Retention	92	92	92	92	92	92
	Extended Detention	181	255	303	130 (but utilized storage is 103)	151 (but utilized storage is 127)	160 (but utilized storage is 135)
	Quantity Active Storage	201	164	143	134	133	135
	TOTAL	**474**	**511**	**538**	**356**	**376**	**387**

	TOTAL SITE COMPARISON [Ex ADDHYD 386 & Pr ADDHYD 384]					
	Flows (m^3/s)		Comparison (% diff)	Runoff Volume (m^3)		Comparison (% diff)
	Ex	Prop.		Ex	Prop.	
5 mm	0.046	0.005	-89	99	9	-0.9
10 mm	0.099	0.061	-38	201	99	-0.5
15 mm	0.154	0.155	1	303	198	-0.3
25 mm	0.267	0.259	-3	507	400	-0.2
2-Year	0.369	0.307	-17	658	548	-0.2
5-Year	0.484	0.321	-34	850	739	-0.1
25-Year	0.654	0.34	-48	1145	1032	-0.1
50-Year	0.723	0.348	-52	1267	1154	-0.1
100-Year	0.793	0.356	-55	1386	1272	-0.1

Detailed Stormceptor Sizing Report – National Homes (Plains Road) LP

Project Information & Location			
Project Name	National Homes (Plains Road) LP	**Project Number**	17-539
City	Burlington	**State/ Province**	Ontario
Country	Canada	**Date**	2/4/2019
Designer Information		**EOR Information (optional)**	
Name	Lisa Maruska	**Name**	
Company	Urbantech West	**Company**	
Phone #	905-829-8818	**Phone #**	
Email	lmaruska@urbantech.com	**Email**	

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	
Recommended Stormceptor Model	STC 4000
Target TSS Removal (%)	80.0
TSS Removal (%) Provided	
PSD	City of Toronto PSD
Rainfall Station	HAMILTON A

The recommended Stormceptor model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary	
Stormceptor Model	**% TSS Removal Provided**
STC 300	61
STC 750	72
STC 1000	74
STC 1500	74
STC 2000	78
STC 3000	79
STC 4000	83
STC 5000	84
STC 6000	86
STC 9000	89
STC 10000	89
STC 14000	92
StormceptorMAX	Custom

Stormceptor

The Stormceptor oil and sediment separator is sized to treat stormwater runoff by removing pollutants through gravity separation and flotation. Stormceptor's patented design generates positive TSS removal for each rainfall event, including large storms. Significant levels of pollutants such as heavy metals, free oils and nutrients are prevented from entering natural water resources and the re-suspension of previously captured sediment (scour) does not occur.
Stormceptor provides a high level of TSS removal for small frequent storm events that represent the majority of annual rainfall volume and pollutant load. Positive treatment continues for large infrequent events, however, such events have little impact on the average annual TSS removal as they represent a small percentage of the total runoff volume and pollutant load.

Design Methodology

Stormceptor is sized using PCSWMM for Stormceptor, a continuous simulation model based on US EPA SWMM. The program calculates hydrology using local historical rainfall data and specified site parameters. With US EPA SWMM's precision, every Stormceptor unit is designed to achieve a defined water quality objective. The TSS removal data presented follows US EPA guidelines to reduce the average annual TSS load. The Stormceptor's unit process for TSS removal is settling. The settling model calculates TSS removal by analyzing:

- Site parameters
- Continuous historical rainfall data, including duration, distribution, peaks & inter-event dry periods
- Particle size distribution, and associated settling velocities (Stokes Law, corrected for drag)
- TSS load
- Detention time of the system

Hydrology Analysis
PCSWMM for Stormceptor calculates annual hydrology with the US EPA SWMM and local continuous historical rainfall data. Performance calculations of Stormceptor are based on the average annual removal of TSS for the selected site parameters. The Stormceptor is engineered to capture sediment particles by treating the required average annual runoff volume, ensuring positive removal efficiency is maintained during each rainfall event, and preventing negative removal efficiency (scour). Smaller recurring storms account for the majority of rainfall events and average annual runoff volume, as observed in the historical rainfall data analyses presented in this section.

Rainfall Station			
State/Province	Ontario	**Total Number of Rainfall Events**	3863
Rainfall Station Name	HAMILTON A	**Total Rainfall (mm)**	20907.2
Station ID #	3194	**Average Annual Rainfall (mm)**	614.9
Coordinates	43°10'N, 79°56'W	**Total Evaporation (mm)**	1914.1
Elevation (ft)	77	**Total Infiltration (mm)**	0.0
Years of Rainfall Data	34	**Total Rainfall that is Runoff (mm)**	18993.1

Notes
• Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules. • Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed. • For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.

Drainage Area	
Total Area (ha)	0.82
Imperviousness %	100.0

Water Quality Objective	
TSS Removal (%)	80.0
Runoff Volume Capture (%)	
Oil Spill Capture Volume (L)	
Peak Conveyed Flow Rate (L/s)	
Water Quality Flow Rate (L/s)	

Up Stream Storage	
Storage (ha-m)	Discharge (cms)
0.000	0.000

Up Stream Flow Diversion	
Max. Flow to Stormceptor (cms)	

Design Details	
Stormceptor Inlet Invert Elev (m)	
Stormceptor Outlet Invert Elev (m)	
Stormceptor Rim Elev (m)	
Normal Water Level Elevation (m)	
Pipe Diameter (mm)	
Pipe Material	
Multiple Inlets (Y/N)	No
Grate Inlet (Y/N)	No

Particle Size Distribution (PSD)

Removing the smallest fraction of particulates from runoff ensures the majority of pollutants, such as metals, hydrocarbons and nutrients are captured. The table below identifies the Particle Size Distribution (PSD) that was selected to define TSS removal for the Stormceptor design.

City of Toronto PSD		
Particle Diameter (microns)	Distribution %	Specific Gravity
10.0	20.0	2.65
30.0	10.0	2.65
50.0	10.0	2.65
95.0	20.0	2.65
265.0	20.0	2.65
1000.0	20.0	2.65

Site Name	

Site Details

Drainage Area

Total Area (ha)	0.82
Imperviousness %	100.0

Surface Characteristics

Width (m)	181.00
Slope %	2
Impervious Depression Storage (mm)	0.508
Pervious Depression Storage (mm)	5.08
Impervious Manning's n	0.015
Pervious Manning's n	0.25

Maintenance Frequency

Maintenance Frequency (months) >	12

Infiltration Parameters

Horton's equation is used to estimate infiltration

Max. Infiltration Rate (mm/hr)	61.98
Min. Infiltration Rate (mm/hr)	10.16
Decay Rate (1/sec)	0.00055
Regeneration Rate (1/sec)	0.01

Evaporation

Daily Evaporation Rate (mm/day)	2.54

Dry Weather Flow

Dry Weather Flow (lps)	0

Winter Months

Winter Infiltration	0

TSS Loading Parameters

TSS Loading Function	

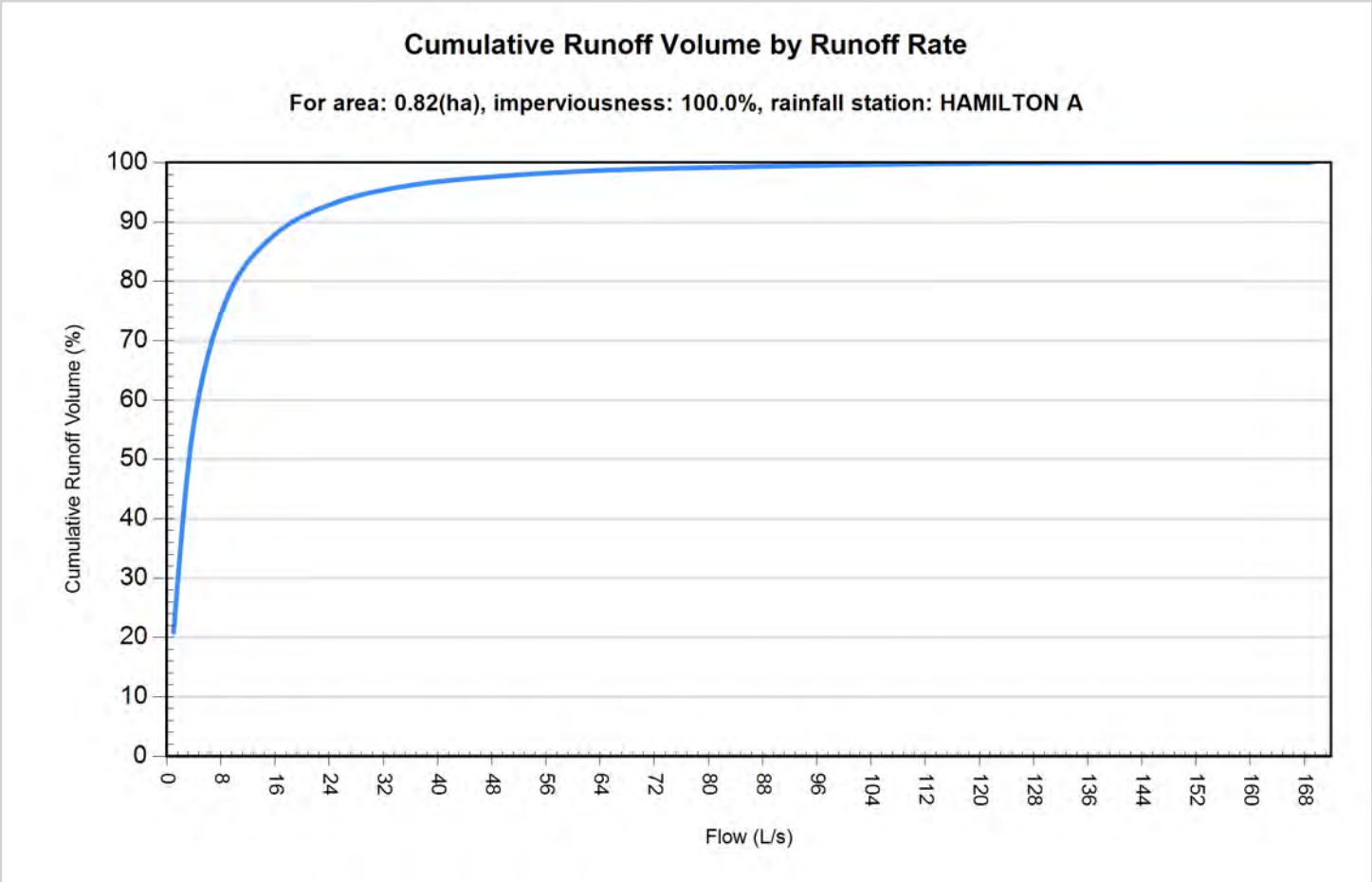
Buildup/Wash-off Parameters

Target Event Mean Conc. (EMC) mg/L	
Exponential Buildup Power	
Exponential Washoff Exponent	

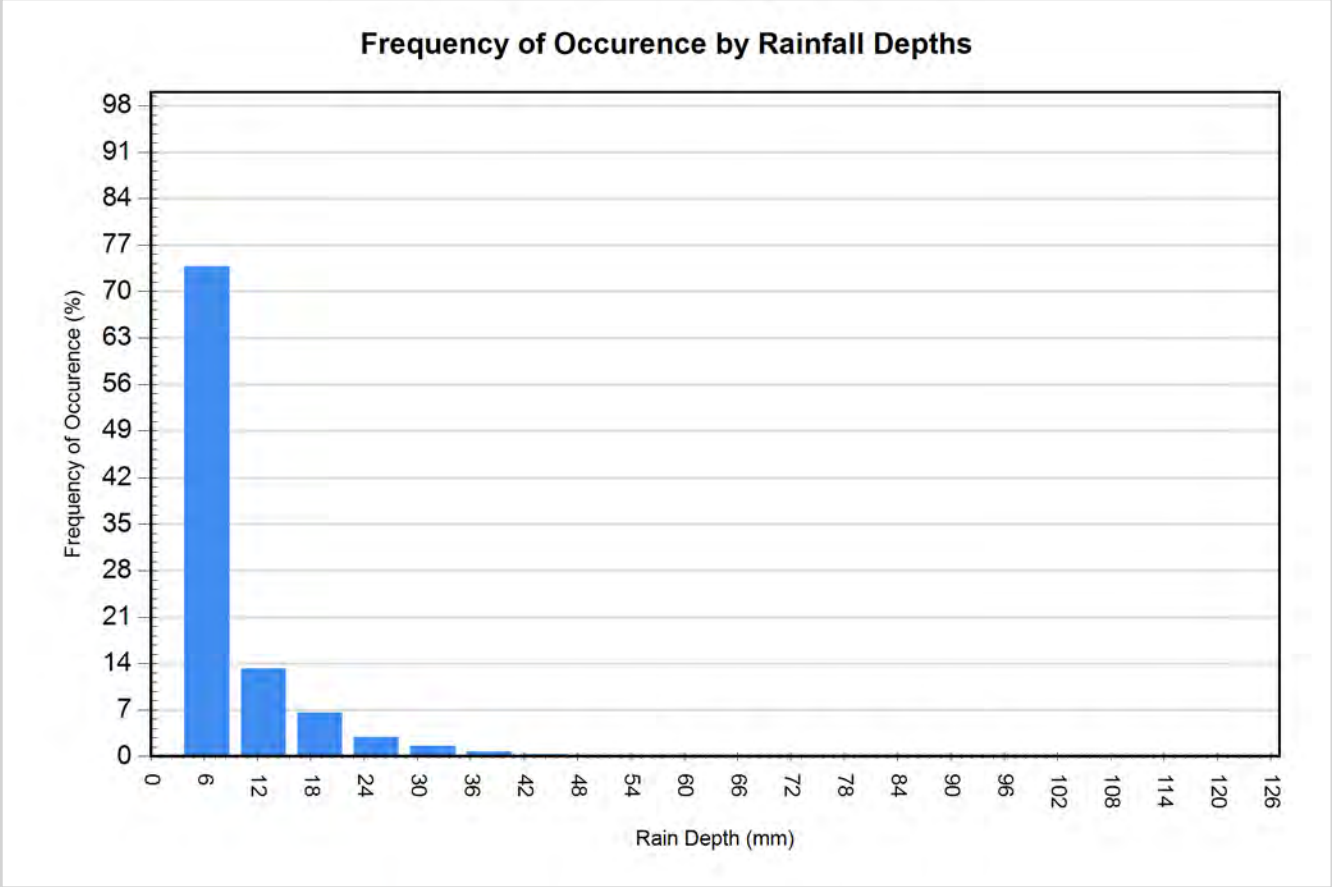
TSS Availability Parameters

Availability Constant A	
Availability Factor B	
Availability Exponent C	
Min. Particle Size Affected by Availability (micron)	

Cumulative Runoff Volume by Runoff Rate			
Runoff Rate (L/s)	**Runoff Volume (m^3)**	**Volume Over (m^3)**	**Cumulative Runoff Volume (%)**
1	32712	123750	20.9
4	87417	69049	55.9
9	121111	35379	77.4
16	137511	18955	87.9
25	145995	10470	93.3
36	150454	6005	96.2
49	152916	3541	97.7
64	154368	2088	98.7
81	155276	1180	99.2
100	155873	582	99.6
121	156234	222	99.9
144	156401	54	100.0
169	156447	8	100.0



Rainfall Event Analysis				
Rainfall Depth (mm)	**No. of Events**	**Percentage of Total Events (%)**	**Total Volume (mm)**	**Percentage of Annual Volume (%)**
6.35	2852	73.8	4781	22.9
12.70	515	13.3	4749	22.7
19.05	254	6.6	3943	18.9
25.40	112	2.9	2471	11.8
31.75	61	1.6	1736	8.3
38.10	28	0.7	985	4.7
44.45	11	0.3	461	2.2
50.80	9	0.2	417	2.0
57.15	9	0.2	493	2.4
63.50	8	0.2	489	2.3
69.85	0	0.0	0	0.0
76.20	0	0.0	0	0.0
82.55	0	0.0	0	0.0
88.90	0	0.0	0	0.0
95.25	2	0.1	181	0.9
101.60	1	0.0	97	0.5
107.95	1	0.0	106	0.5
114.30	0	0.0	0	0.0
120.65	0	0.0	0	0.0



For Stormceptor Specifications and Drawings Please Visit:
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Detailed Stormceptor Sizing Report – National Homes (Plains Road) LP

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Country	Canada	**Date**	2/4/2019
Designer Information		**EOR Information (optional)**	
Name	Lisa Maruska	**Name**	
Company	Urbantech West	**Company**	
Phone #	905-829-8818	**Phone #**	
Email	lmaruska@urbantech.com	**Email**	

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Peak Conveyed Flow Rate (L/s)	
Water Quality Flow Rate (L/s)	

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Storage (ha-m)	Discharge (cms)
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Up Stream Flow Diversion	
Max. Flow to Stormceptor (cms)	

Design Details	
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Impervious Manning's n	0.015
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Maintenance Frequency (months) >	12

Infiltration Parameters

Horton's equation is used to estimate infiltration

Max. Infiltration Rate (mm/hr)	61.98
Min. Infiltration Rate (mm/hr)	10.16
Decay Rate (1/sec)	0.00055
Regeneration Rate (1/sec)	0.01

Evaporation

Daily Evaporation Rate (mm/day)	2.54

Dry Weather Flow

Dry Weather Flow (lps)	0

Winter Months

Winter Infiltration	0

TSS Loading Parameters

TSS Loading Function	

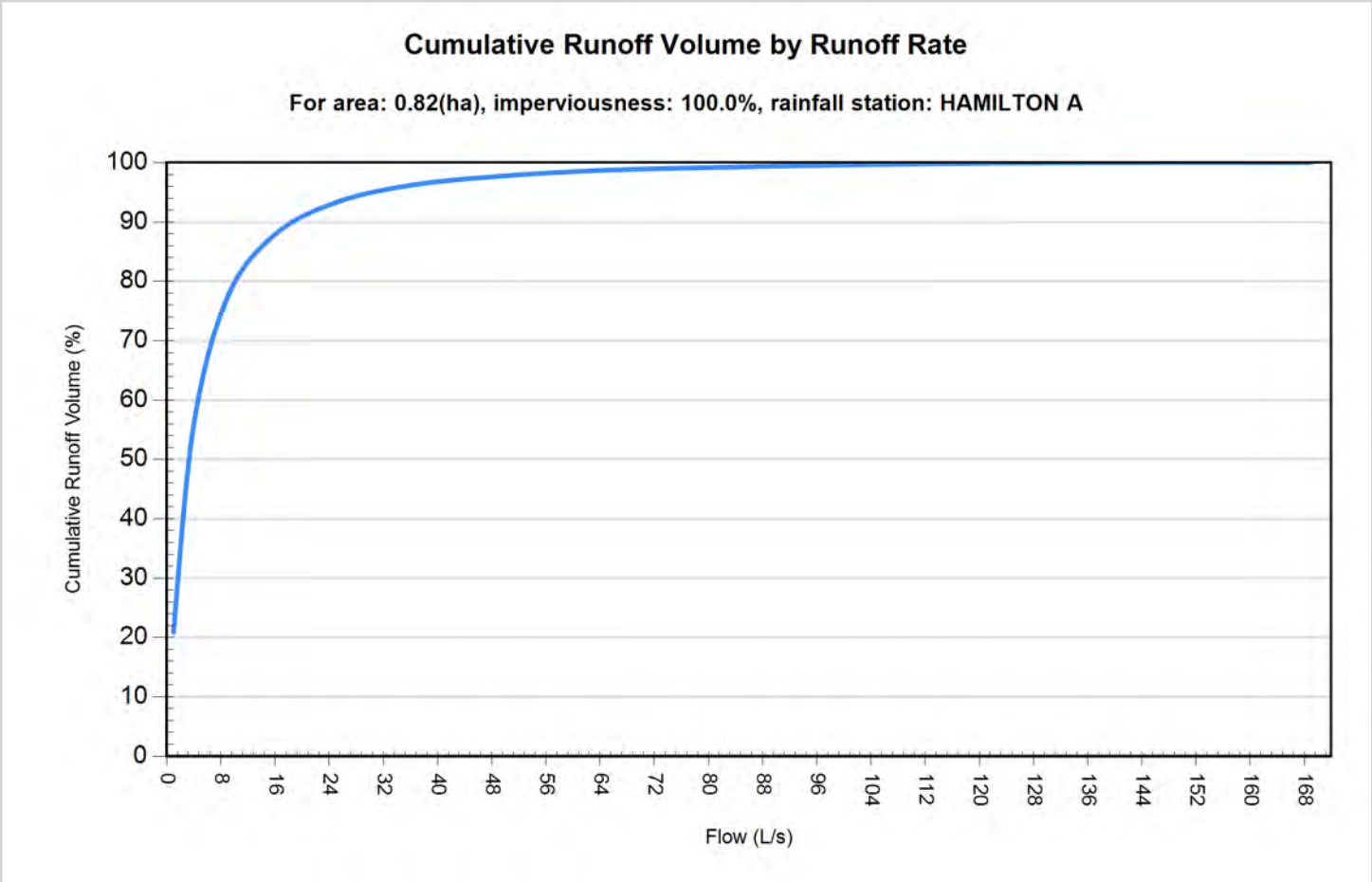
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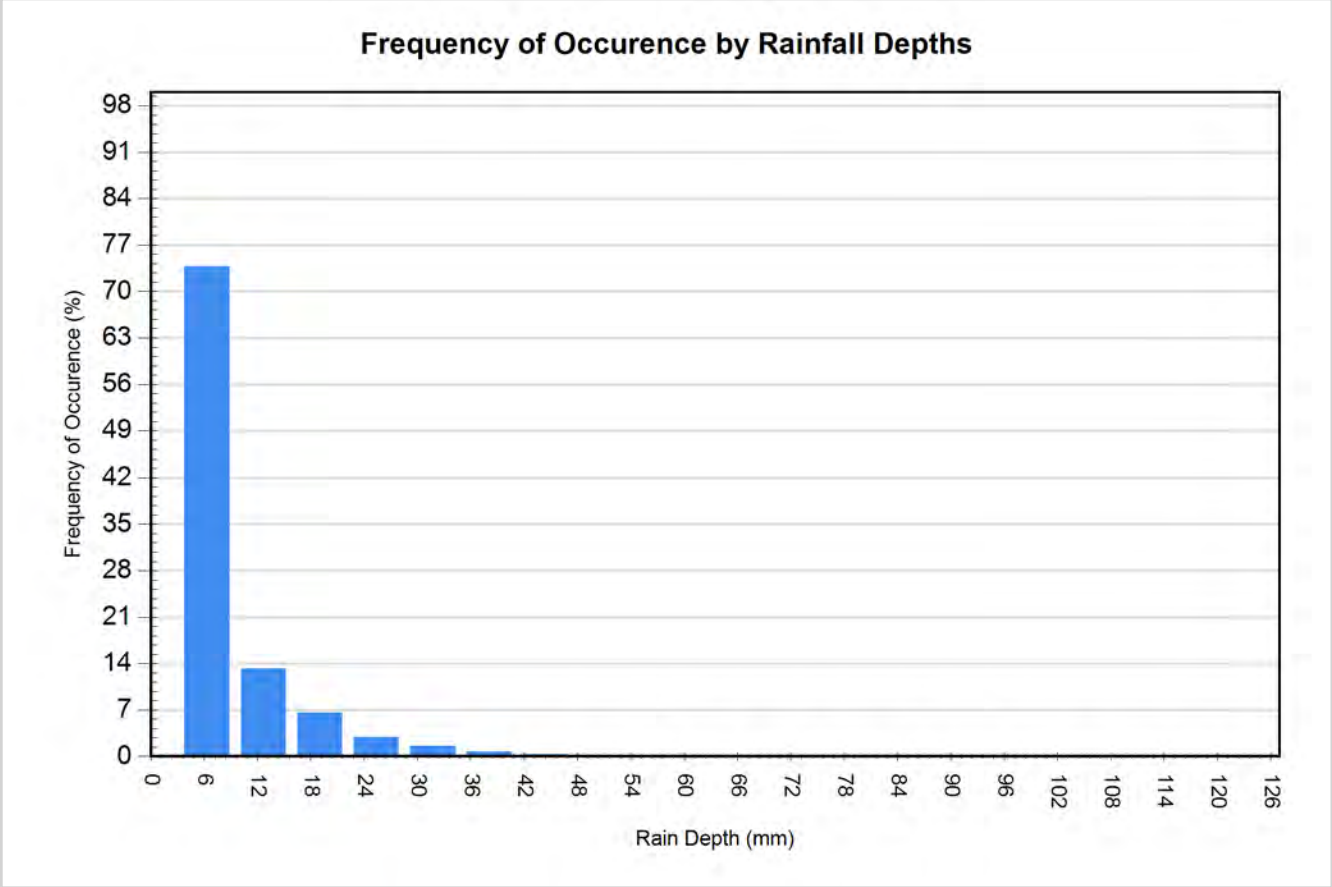
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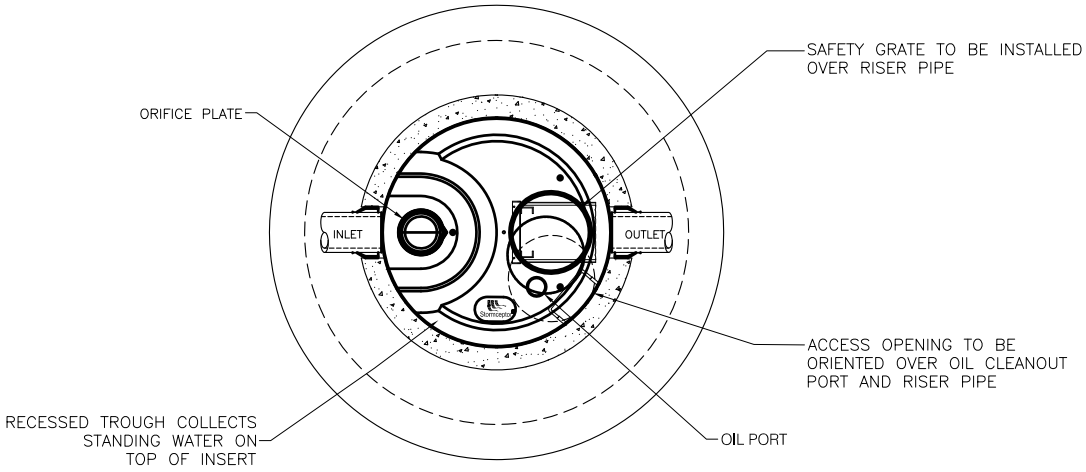
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Rainfall Depth (mm)	**No. of Events**	**Percentage of Total Events (%)**	**Total Volume (mm)**	**Percentage of Annual Volume (%)**
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44.45	11	0.3	461	2.2
50.80	9	0.2	417	2.0
57.15	9	0.2	493	2.4
63.50	8	0.2	489	2.3
69.85	0	0.0	0	0.0
76.20	0	0.0	0	0.0
82.55	0	0.0	0	0.0
88.90	0	0.0	0	0.0
95.25	2	0.1	181	0.9
101.60	1	0.0	97	0.5
107.95	1	0.0	106	0.5
114.30	0	0.0	0	0.0
120.65	0	0.0	0	0.0



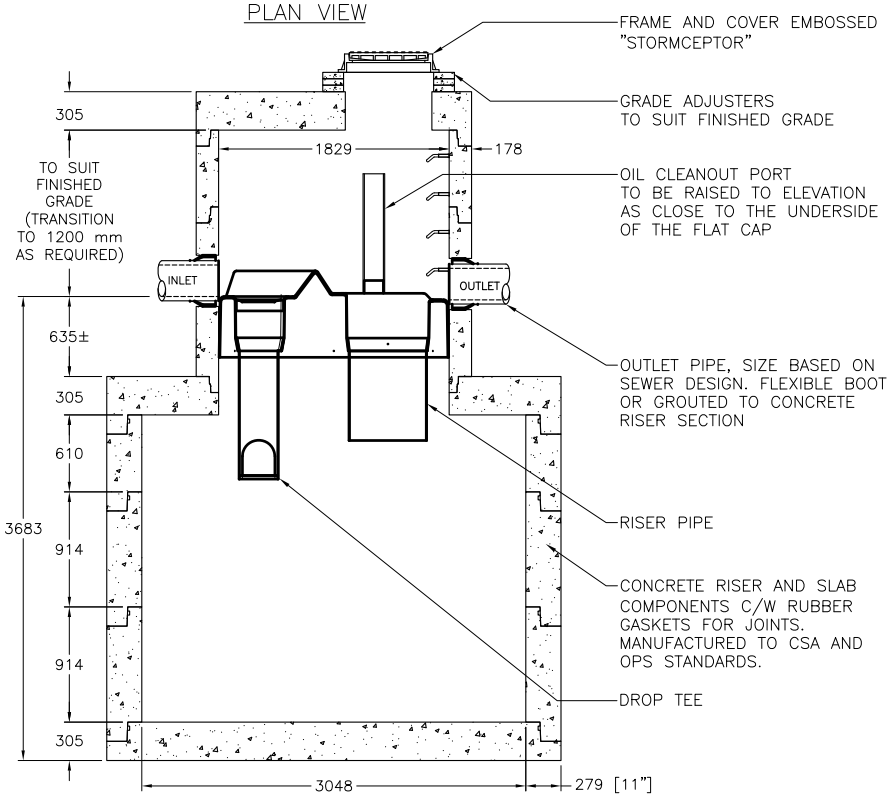
For Stormceptor Specifications and Drawings Please Visit:
http://www.imbriumsystems.com/technical-specifications

DRAWING NOT TO BE USED FOR CONSTRUCTION

THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:
United States Patent No. 5,753,115 • 5,849,181 • 6,068,765 • 6,371,690 • 7,582,216 • 7,666,303 | Australia Patent No. 729,096 • 779,401 • 2008,279,378 • 2008,288,900 |
Canadian Patent No. 2,206,338 • 2,327,768 • 2,694,159 • 2,697,287 | European Paten No. EP 2,176,171 | Indonesian Patent No. 0,007,058 | Japan Patent No. 3,581,233 • 9-11476 • 5,555,160 |
Korea Patent No. 10-1451593 • 0519,212 | Malaysia Patent No. 118,987 | New Zealand Patent No. 314,646 • 583,583 • 583,008 | South African Patent No. 2010,00683 • 2010,01796 |



PLAN VIEW



SECTION VIEW

Stormceptor®

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STC 4000
STANDARD MODEL
####

REV #	DATE	REVISION DESCRIPTION	BY

SHEET NUMBER 1 OF 1

DATE:########	SCALE: 50	PROJECT No.: #####	DRAWN: ###	CHECKED: ###

\\AD.CONTECH-CPI.COM\ROOT\CORPORATE\MARKETING\IMBRIUM\CAD & PDF\STORMCEPTOR\CANADIAN\STC 4000.DWG 8/8/2016 9:23 AM

DRAWINGS

Drawing REM – Existing Conditions & Removals Plan

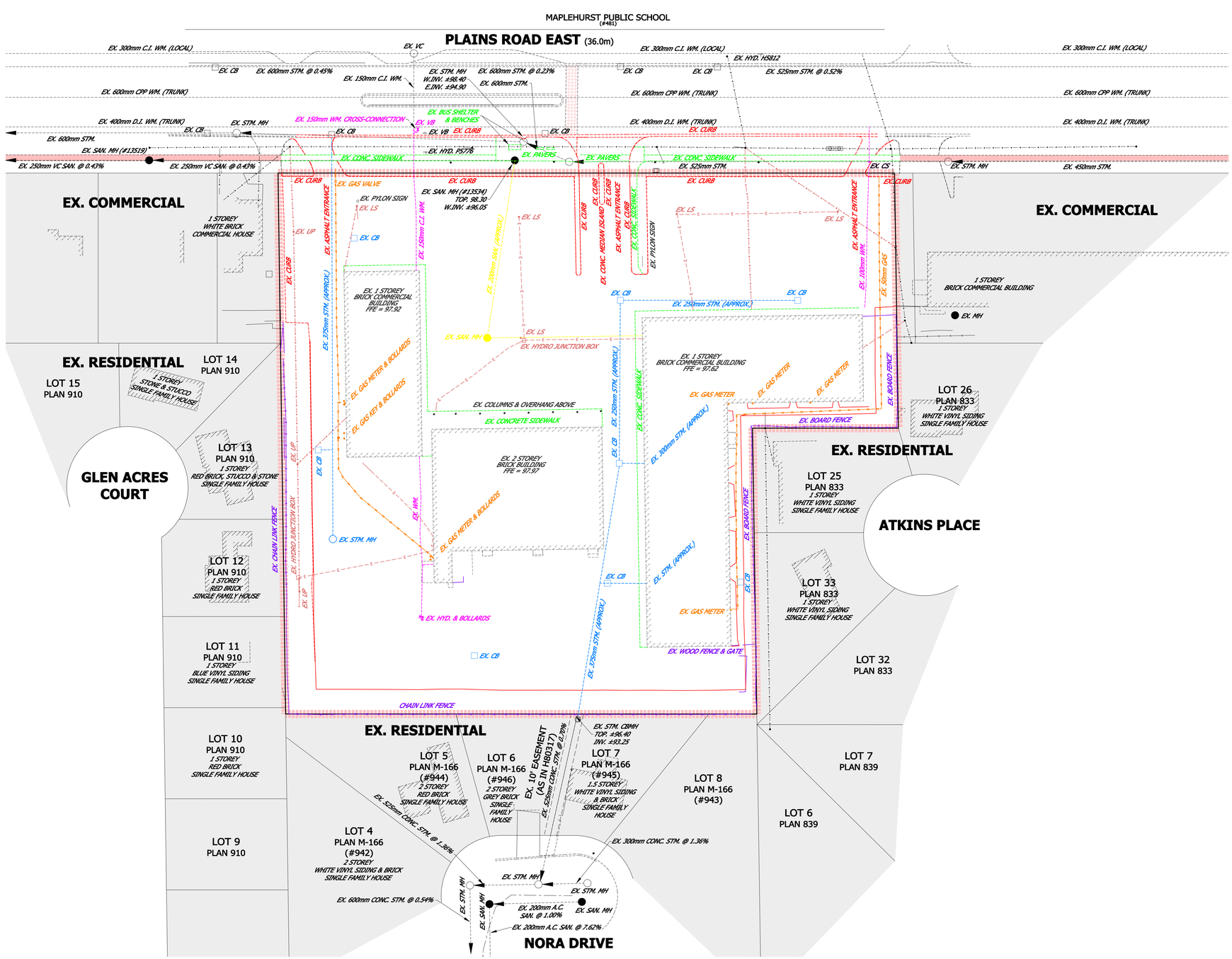
Drawing SP – Servicing Concept

Drawing STM-1 – Pre-Development Storm Drainage Plan

Drawing STM-2 – Post-Development Storm Drainage Concept

Drawing GR – Grading Plan

Urbantech® Consulting, A Division of Leighton-Zec Ltd.
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LEGEND

- EXISTING CURB, ASPHALT TO BE REMOVED
- EXISTING SIDEWALK TO BE REMOVED
- EXISTING SANITARY SEWER TO BE REMOVED
- EXISTING STORM SEWER TO BE REMOVED
- EXISTING WATERMAIN TO BE REMOVED
- EXISTING FENCING TO BE REMOVED
- EXISTING STRUCTURE TO BE REMOVED
- EXISTING GAS SERVICE TO BE REMOVED
- EXISTING OVERHEAD/UNDERGROUND HYDRO, BELL TO BE REMOVED
- LIMIT OF PROPERTY
- FUTURE/EXISTING DEVELOPMENT LANDS

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EXISTING CONDITIONS & REMOVALS PLAN

484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

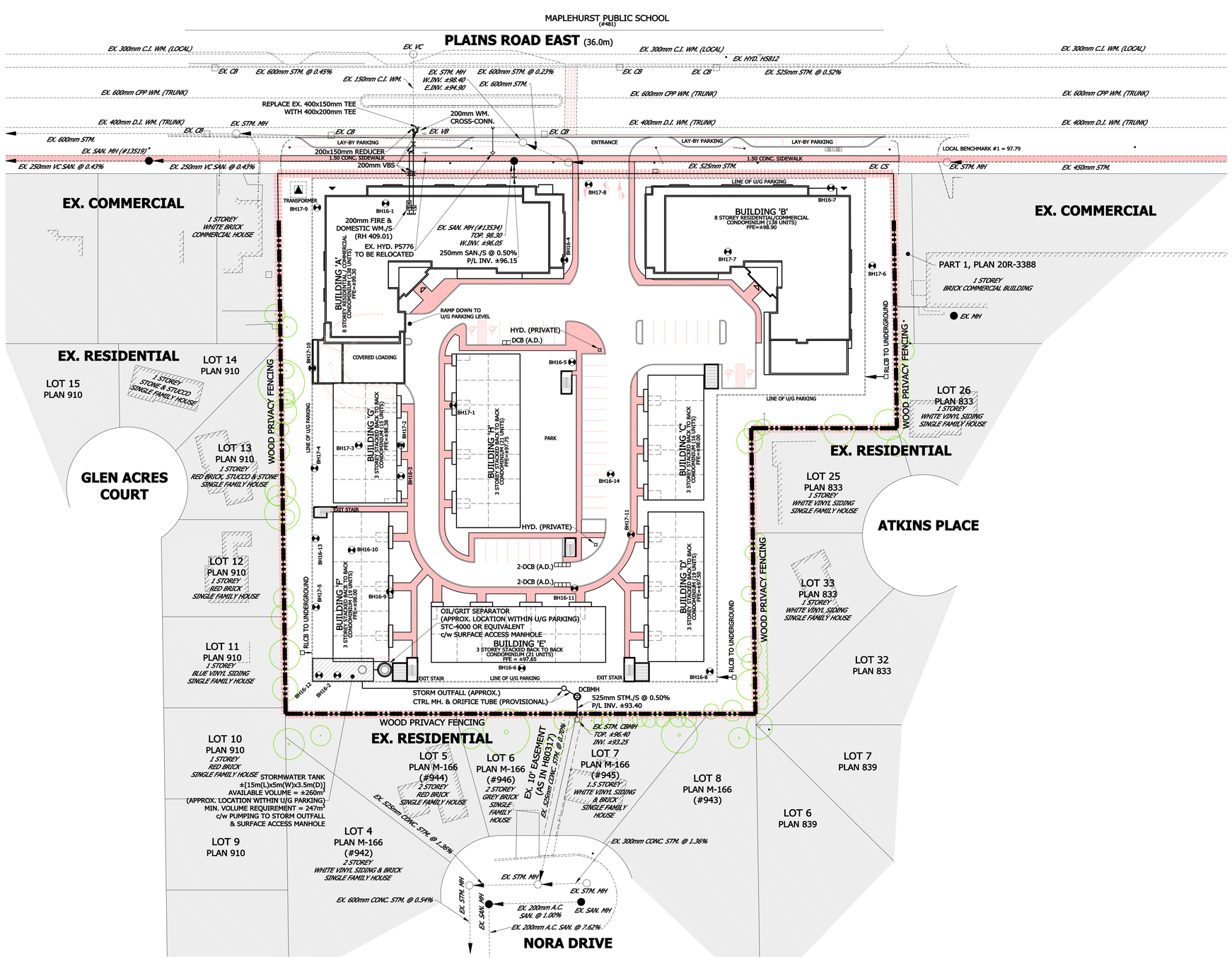
PROJECT No.: 17-539

DATE: SEPTEMBER 2017

SCALE:

FIGURE No.: **REM**

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LEGEND

- STORM SEWER AND MANHOLE
- SANITARY SEWER AND MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- EXISTING SANITARY SEWER AND MANHOLE
- SINGLE, DOUBLE CATCHBASIN
- A.D. SINGLE, DOUBLE AREA DRAIN TO PARKING LEVEL
- HYDRANT & VALVE
- VALVE AND BOX
- WATER METER, BACK FLOW PREVENTION DEVICE (ALL WATER SERVICES TO BE PROVIDED WITH BACKFLOW PREVENTION WHERE ENTERING BUILDINGS)
- BARRIER CURB (OPSD 600.110)
- PRINCIPAL/BARRIER-FREE ENTRANCE, ENTRANCE
- LIMIT OF PROPERTY
- FIRE ROUTE
- FUTURE/EXISTING DEVELOPMENT LANDS

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SERVICING CONCEPT

484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

PROJECT No.: 17-539

DATE: SEPTEMBER 2017

SCALE:

FIGURE No.: **SP**

File: C:\Users\OSomerville\Desktop\OS WORKING FOLDER\Projects\OS_17-539\Drawings_Site Plan\Servicing Plan\17-539_Servicing.dwg - Revised by <OSOMERVILLE> : Wed, Sep 13 2017 - 5:49pm

MAPLEHURST PUBLIC SCHOOL
(#481)

PLAINS ROAD EAST (36.0m)

EX. CB
EX. 600mm STM. @ 0.45%
EX. STM. MH
W.INV. ±98.40
E.INV. ±94.90
EX. 600mm STM. @ 0.23%
EX. 600mm STM.
EX. CB
EX. CB
EX. 525mm STM. @ 0.52%
EX. 600mm STM.
EX. CB
EX. STM. MH
EX. CB
EX. CB
EX. 525mm STM.
EX. STM. MH
EX. 450mm STM.

EX. COMMERCIAL

1 STOREY
WHITE BRICK
COMMERCIAL HOUSE

0.16
0.90
EX. MINOR SYSTEM DRAINAGE
TO PLAINS ROAD EAST

EX. CB

1.97
0.90
EX. DRAINAGE TO NORA DRIVE
(±1.80 Ha. MINOR SYSTEM)

EX. COMMERCIAL

PART 1, PLAN 20R-3388
1 STOREY
BRICK COMMERCIAL BUILDING

EX. 375mm STM. (APPROX.)
EX. 1 STOREY
BRICK COMMERCIAL
BUILDING
FFE = 97.92
EX. CB
EX. 250mm STM. (APPROX.)

EX. RESIDENTIAL

LOT 14
PLAN 910

LOT 15
PLAN 910

1 STOREY
STONE & STUCCO
SINGLE FAMILY HOUSE

EX. 1 STOREY
BRICK COMMERCIAL BUILDING
FFE = 97.62

EX. 250mm STM. (APPROX.)

LOT 26
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

EX. 300mm STM. (APPROX.)

EX. RESIDENTIAL

LOT 13
PLAN 910
1 STOREY
RED BRICK, STUCCO & STONE
SINGLE FAMILY HOUSE

GLEN ACRES COURT

EX. 2 STOREY
BRICK BUILDING
FFE = 97.97

LOT 25
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

ATKINS PLACE

EX. STM. MH

EX. CB
EX. STM. (APPROX.)
EX. CB
EX. 375mm STM. (APPROX.)

LOT 12
PLAN 910
1 STOREY
RED BRICK
SINGLE FAMILY HOUSE

LOT 33
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

EX. 10' EASEMENT
(AS IN H80317)
EX. CB

LOT 11
PLAN 910
1 STOREY
BLUE VINYL SIDING
SINGLE FAMILY HOUSE

LOT 32
PLAN 833

EX. DRAINAGE TO NORA DRIVE
0.09
0.40

EX. RESIDENTIAL

EX. STM. CBMH
TOP. ±96.40
INV. ±93.25

LOT 10
PLAN 910
1 STOREY
RED BRICK
SINGLE FAMILY HOUSE

LOT 5
PLAN M-166
(#944)
2 STOREY
RED BRICK
SINGLE FAMILY HOUSE

LOT 6
PLAN M-166
(#946)

LOT 7 PLAN M-166
(#945)

LOT 8
PLAN M-166
(#943)

LOT 7
PLAN 839

2 STOREY
GREY BRICK
SINGLE
FAMILY
HOUSE

EX. 525mm CONC. STM. @ 0.79%

1.5 STOREY
WHITE VINYL SIDING
& BRICK
SINGLE FAMILY
HOUSE

LOT 6
PLAN 839

EX. 525mm CONC. STM. @ 1.38%

LOT 9
PLAN 910

LOT 4
PLAN M-166
(#942)
2 STOREY
WHITE VINYL SIDING & BRICK
SINGLE FAMILY HOUSE

EX. 300mm CONC. STM. @ 1.36%

EX. STM. MH
EX. STM. MH
EX. STM. MH

EX. 600mm CONC. STM. @ 0.54%

NORA DRIVE

LEGEND

- 247.00 — EXISTING CONTOUR AND ELEVATION
- EXISTING STORM SEWER AND MANHOLE
- EXISTING CATCHBASIN
- 0.25 / 0.90 — EXISTING DRAINAGE AREA (Ha.) / EXISTING RUNOFF COEFFICIENT
- EXISTING DRAINAGE AREA BOUNDARY
- EXISTING OVERLAND FLOW ROUTE
- LIMIT OF PROPERTY
- FUTURE/EXISTING DEVELOPMENT LANDS

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PRE-DEVELOPMENT STORM DRAINAGE PLAN

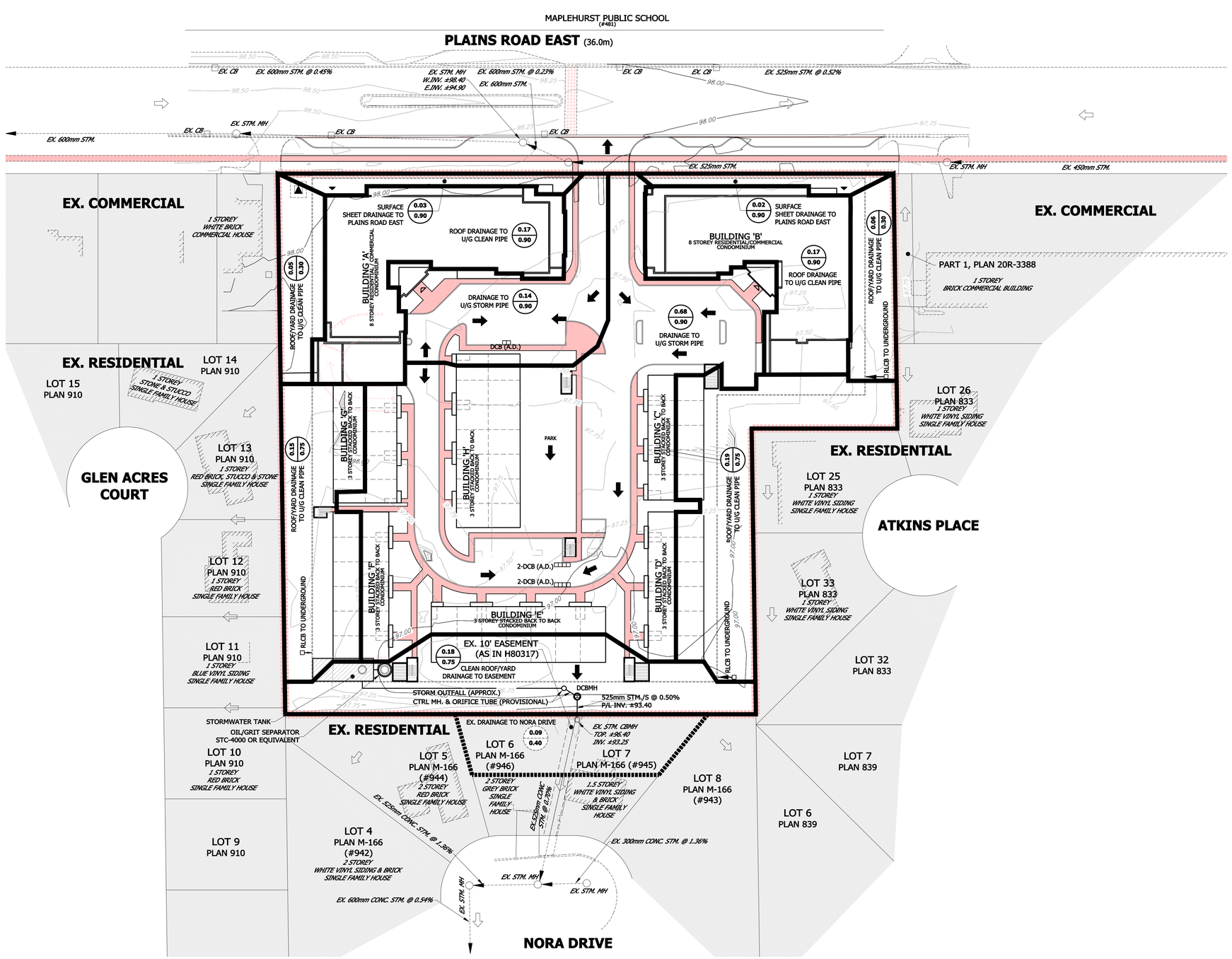
484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

PROJECT No.: 17-539
DATE: SEPTEMBER 2017
SCALE:

FIGURE No.: **STM-1**

File: C:\Users\DSomerville\Desktop\DS WORKING FOLDER\Projects\DS_17-539\Drawings_Site Plan\Drainage Plan\17-539_Pre-Development Drainage.dwg - Revised by <DSOMERVILLE> - Wed, Sep 13 2017 - 5:59pm



LEGEND

- 247.00 — EXISTING CONTOUR AND ELEVATION
- STORM SEWER AND MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- SINGLE, DOUBLE CATCHBASIN
- A.D. SINGLE, DOUBLE AREA DRAIN TO PARKING LEVEL
- 0.63 / 0.65 — PROPOSED DRAINAGE AREA (Ha.) / PROPOSED RUNOFF COEFFICIENT
- PROPOSED DRAINAGE AREA BOUNDARY
- PROPOSED OVERLAND FLOW ROUTE
- EXISTING OVERLAND FLOW ROUTE
- LIMIT OF PROPERTY
- FUTURE/EXISTING DEVELOPMENT LANDS

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POST-DEVELOPMENT STORM DRAINAGE CONCEPT

484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

PROJECT No.: 17-539

DATE: SEPTEMBER 2017

SCALE:

FIGURE No.: **STM-2**

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MAPLEHURST PUBLIC SCHOOL
(#481)

PLAINS ROAD EAST (36.0m)

EX. CURB
EX. ASPHALT LAY-BY
EX. CURB
EX. CONC. MEDIAN ISL.
EX. CURB
EX. PAVERS
EX. UP
EX. CURB
EX. ASPHALT ENTRANCE
EX. CENTERLINE
EX. CENTERLINE
EX. CURB
EX. UP
LAY-BY PARKING
LAY-BY PARKING
LAY-BY PARKING
EX. BELL CHAMBER
EX. UP
EX. CONC. SIDEWALK
1.50 CONC. SIDEWALK
EX. LS
EX. LS
1.50 CONC. SIDEWALK
EX. UP
EX. CONC. SIDEWALK
EX. TRAFFIC CONTROLLER

EX. COMMERCIAL

1 STOREY WHITE BRICK COMMERCIAL HOUSE

EX. ASPHALT ENTRANCE

TRANSFORMER

BUILDING 'A'
8 STOREY RESIDENTIAL / COMMERCIAL CONDOMINIUM (138 UNITS)
FFE=±99.30

RAMP DOWN TO LOT GRADING LEVEL

BUILDING 'B'
8 STOREY RESIDENTIAL/COMMERCIAL CONDOMINIUM (138 UNITS)
FFE=±98.90

EX. COMMERCIAL

EX. ASPHALT ENTRANCE

PART 1, PLAN 20R-3388

EX. 1 STOREY BRICK COMMERCIAL BUILDING (#516)
FFE=±96.15

EX. UP
EX. TOP OF SLOPE
EX. CHAIN LINK FENCE
EX. UP

EX. RESIDENTIAL

LOT 15
PLAN 910

1 STOREY STONE & STUCCO SINGLE FAMILY HOUSE

LOT 14
PLAN 910

COVERED LOADING

WOOD PRIVACY FENCING

LOT 26
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

EX. RESIDENTIAL

LOT 13
PLAN 910
1 STOREY
RED BRICK, STUCCO & STONE
SINGLE FAMILY HOUSE

GLEN ACRES COURT

BUILDING 'G'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (15 UNITS)
FFE=±98.30

BUILDING 'H'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (15 UNITS)
FFE=±97.75

PARK

BUILDING 'C'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (15 UNITS)
FFE=±96.00

LOT 25
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

ATKINS PLACE

GARBAGE

BUILDING 'F'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (15 UNITS)
FFE=±96.00

BUILDING 'D'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (15 UNITS)
FFE=±97.50

BUILDING 'E'
3 STOREY STACKED BACK TO BACK CONDOMINIUM (21 UNITS)
FFE = ±97.65

LOT 12
PLAN 910
1 STOREY
RED BRICK
SINGLE FAMILY HOUSE

LOT 33
PLAN 833
1 STOREY
WHITE VINYL SIDING
SINGLE FAMILY HOUSE

WOOD PRIVACY FENCING

LOT 11
PLAN 910
1 STOREY
BLUE VINYL SIDING
SINGLE FAMILY HOUSE

LOT 32
PLAN 833

LOT 10
PLAN 910
1 STOREY
RED BRICK
SINGLE FAMILY HOUSE

EX. RESIDENTIAL

LOT 5
PLAN M-166
(#944)
2 STOREY
RED BRICK
SINGLE FAMILY HOUSE

LOT 6
PLAN M-166
(#946)
2 STOREY
GREY BRICK
SINGLE FAMILY HOUSE

EX. 10' EASEMENT (AS IN H80317)

LOT 7 PLAN M-166
(#945)

EX. GAS METER

1.5 STOREY
WHITE VINYL SIDING & BRICK
SINGLE FAMILY HOUSE

LOT 8
PLAN M-166
(#943)

LOT 7
PLAN 839

LOT 6
PLAN 839

EX. HP

LOT 9
PLAN 910

LOT 4
PLAN M-166
(#942)
2 STOREY
WHITE VINYL SIDING & BRICK
SINGLE FAMILY HOUSE

EX. ASP. DWY.
EX. LS
EX. CURB

NORA DRIVE

LEGEND

247.00	EXISTING CONTOUR AND ELEVATION
+240.71	PROPOSED ELEVATION
+241.00	EXISTING ELEVATION
+(264.155)	FUTURE ELEVATION
·247.24TC/BC	TOP/BOTTOM OF CURB ELEVATION
	MAXIMUM 3:1 SLOPE
	PROPOSED SWALE
	PROPOSED OVERLAND FLOW DIRECTION
	EXISTING OVERLAND FLOW DIRECTION
	PROPOSED, EXISTING STORM MANHOLE
	PROPOSED, EXISTING SANITARY MANHOLE
	SINGLE CATCHBASIN/AREA DRAIN TO PARKING LEVEL
	DOUBLE CATCHBASIN/AREA DRAIN TO PARKING LEVEL
	HYDRANT & VALVE
	VALVE AND BOX
	LIMIT OF PROPERTY
	FUTURE/EXISTING DEVELOPMENT LANDS
	TREE PROTECTION ZONE (REFER TO TREE INVENTORY AND PRESERVATION PLAN FOR DETAILS)

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GRADING CONCEPT

484 & 490 PLAINS ROAD EAST
CITY OF BURLINGTON, HALTON REGION

NATIONAL HOMES (PLAINS ROAD) LP

PROJECT No.: 17-539
DATE: SEPTEMBER 2017
SCALE:

FIGURE No.: **GR**

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