FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT

425 UNION STREET

MUNICIPALITY OF MEAFORD
GREY COUNTY

PREPARED FOR:

2774476 ONTARIO INC.

PREPARED BY:

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MAY 2021

CFCA FILE NO. 1923-5641

CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev.0	May 2021	Issued for Draft Plan Approval

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1.0 Introduction

C.F. Crozier and Associates (Crozier) was retained by 2774476 Ontario Inc. to prepare a Functional Servicing and Stormwater Management Report to support the Draft Plan Application for the proposed development located at 425 Union Street in the Municipality of Meaford, Grey County (the "Site"). The Site is made up of three separate lots. The largest lot is legally described as Lots 421 – 425, RP 16R8356 parts 1 to 3 and 16R9139 part 1. The two smaller lots are legally described as Lot 425, RP 16R6036 part 5 and part 6. Refer to Figure 1 for the Site Location.

The Subject Lands are located in the regulated jurisdiction of the Grey Sauble Conservation Authority (GSCA) and are subject to development and site alteration policies.

The Site is proposed to be developed into a mixed-residential subdivision including 86 units of various types fronting onto public and private roadways. Units will consist of a mix of 48 single detached and 38 semi-detached units. The proposed 20 m wide public roadway (Street A) will run east to west, connecting Union Street and Centre street through the proposed development. Private 7.5 m wide streets (Street B, Street C and Street D) will branch off street A providing access to the proposed lots. Refer to Figure 2 for the Draft Plan of Subdivision prepared by Travis and Associates, dated May 2021. The proposed internal roadways and associated servicing will be consistent with the Municipality of Meaford's Engineering Standards for a residential roadway.

External documents/plans were reviewed over the course of completing this engineering report. As such, the servicing and design considerations contained herein are assisted by the following:

- Municipal Staff Report No. CAO2020-23 – Meaford WWTP Servicing Allocation prepared by the Municipality of Meaford, dated November 30, 2020.
- Municipality of Meaford: Engineering Standards prepared by the Municipality of Meaford, dated April 2019.
- Annual Drinking Water System Compliance Report prepared by the Municipality of Meaford, dated 2019.
- Meaford Water Pollution Control Plant Annual Report prepared by the Municipality of Meaford, dated 2019.
- Municipality of Meaford Master Plan Water and Wastewater Servicing Volume 1 and 2 prepared by Ainley Group, dated April 2015.

2.0 Water Servicing

Potable water for the Site will be supplied by the Municipality of Meaford Water Treatment Plant and associated water distribution system.

2.1 Existing Water Servicing

Domestic water is provided by way of the Meaford Water Treatment Plant (WTP), located at Sykes Street and Albery Court in Meaford. Source water is drawn from the Georgian Bay and treated to the Safe Drinking Water Act (SDWA) standards and the plant has a rated capacity of 26,848 m^3/day. According to the 2019 Meaford WTP Summary Report prepared by the Municipality of Meaford, the plant provides an average daily treated water flow of 1,523 m^3/day.

The existing water distribution infrastructure at or near the Site includes the following:

- An existing 200 mm diameter watermain on Union Street.
- An existing 150 mm diameter watermain on Centre Street.
- An existing 200 mm diameter watermain within an easement through the site, between Union Street and Centre Street.

Refer to the As-Constructed Drawings in Appendix A.

2.2 Proposed Water Demand

The proposed development will be serviced in accordance with the recommendations of the Municipality of Meaford Water & Waste Water Servicing Master Plan prepared by Ainley Group, dated April 2015. Water demands for the residential development were determined in accordance with the design parameters identified in the Master Plan prepared by Ainley Group, which included the following design figures:

- Average Residential Flow Rate 300 L/cap/day
- Max Day/Peak Hour Factors 1.94/2.92
- Population Density 2.4 Persons Per Unit

It is estimated that the maximum water demands for the proposed development are as follows:

- Average Day 0.72 L/sec
- Max Day 1.39 L/sec
- Peak Hour 2.09 L/sec

Preliminary fire flows required to service the Site were calculated to be 116.7 L/s per the Fire Underwriter's Survey and 45 L/s per the Ontario Building Code, which will be confirmed once architectural plans are prepared during detailed design. The preliminary design flow (peak hour + fire flow) for the Subject Site is 118.79 L/s, subject to detailed design. Refer to Appendix B for potable water servicing demand and fire flow demand calculations.

The above water demand calculations have been provided to incorporate into the Municipality-wide water model to confirm sizing and available pressures. Internal watermain sizing may be subject to change.

2.3 Proposed Water Servicing

Since there is existing watermain on Union Street and Centre Street, the proposed servicing strategy is to connect the two watermains through the proposed development following the profile of the Street A (public roadway). The watermain will be constructed within the roadway per Municipality standards for a typical road section. The existing 200mm diameter watermain that runs through the Site will be removed and plugged at the watermain on Union Street and Centre Street. Refer to Figure 3 for the Servicing Plan.

Based on the expected water demand and the size of existing watermain adjacent to the Site, the proposed internal watermain along the public Street A is expected to be a 200 mm diameter pipe with a 150mm diameter watermain along the private Streets B, C and D. The Municipality may wish to assumed ownership of the watermain distribution network within the private roadways, including all

mains and the service connections up to and including the curb stops. If that is the case, an easement in the name of the Municipality along the alignment of the watermain through the private roadways. Actual watermain sizes will be confirmed during detailed design, following the updates to the Municipality's water model. The individual units will be serviced with a 19 mm diameter Type "K" copper water service or approved equivalent per the Municipality's Engineering Standards.

Fire protection for the residential units will be provided by fire hydrants spaced as per Municipality Standards. It is noted that a hydrant flow test has not been completed to verify existing pressures and flow relationships; however, it is expected that adequate fire flows will be available to meet Municipal requirements. If required, a hydrant flow test will be completed during detailed design.

3.0 Sanitary Servicing

3.1 Existing Services

3.1.1 Water Pollution Control Plant (WPCP)

Sanitary servicing for the development will be achieved via connection to the Municipality of Meaford Water Pollution Control Plant (WPCP) and sanitary sewer system. The Municipality of Meaford WPCP has been in service since 1970 with multiple upgrades throughout its service life. In 2007, the Municipality completed a Schedule C Municipal Class Environmental Assessment (Class EA) for potential expansion of the WPCP, which was triggered by a capacity analysis that identified the plant capacity was over 80%. The Class EA identified a combination of alternatives, which are listed below:

- Expand the existing plant on-site and purchase the immediately adjacent property for buffer/flexibility.
- Optimize plant operation.
- Reduce inflow and infiltration (I&I) and improve water conservation.

The Municipality did not have sufficient funds to proceed with the expansion of the WPCP and a consultant was retained to re-evaluate the design population calculated in the Class EA. The re-evaluation identified that a 20% expansion would add approximately 605 residential units of capacity. The Municipality proceeded with the initiation of an addendum to the 2007 Class EA in 2015; however, sewage flow at the WPCP had decreased to approximately 56% capacity, partially due to a reduction in I&I in the Municipality's sanitary sewers. Since there appeared to be sufficient capacity in the WPCP, the Municipality did not proceed with the addendum to the 2007 Class EA.

The 2019 Annual Report for the WPCP identified that the average daily flow was 2,941 m^3/day, which is equivalent to 75% of the plant's total capacity (3,910 m^3/day). A Staff Report was presented to Council on November 30th, 2020 which recommended two plans be developed:

1. An inflow/infiltration strategy that will consider priority investment in infrastructure that optimizes the operation of the WPCP and the creation of additional capacity.
2. An uncommitted sewage reserve capacity implementation plan to address future development.

Within the Staff Report it was also noted that the Meaford Official Plan provides allocation framework which generally restricts development phases to approximately 30 units per phase where practical. Refer to the full staff report in Appendix C.

3.1.2 Existing Sanitary Sewer System

According to the Gates of Kent As-Constructed drawings in Appendix A, an existing 200mm diameter sanitary sewer is located at the intersection of Russett Drive and Union Street, approximately 250m north of Street A. From this location, sanitary flow is conveyed via gravity sewer to Sewage Pumping Station (SPS) #1 located on Denmark Street. From SPS #1 sanitary flow is conveyed directly to the WPCP via forcemain.

3.2 Design Sanitary Flow

The proposed development will be serviced in accordance with the recommendations of the Municipality of Meaford Water & Wastewater Servicing Master Plan prepared by Ainley Group, dated April 2015. Sanitary flow rates for the residential development were determined in accordance with the design parameters identified in the Master Plan prepared by Ainley Group, which included the following design figures:

- Average Residential Flow Rate 300 L/cap/day
- Infiltration 0.23 L/s/ha
- Persons Per Residential Unit 2.4

Based on these values it is estimated that peak sanitary flow from the Site will be 4.20 L/s. Refer to Appendix D for sanitary design calculations.

Since the Site was designated as an Urban Living Area in the Municipality of Meaford Official Plan (2014) and the relatively low flows from the proposed development, it is assumed that there will be sufficient capacity in the existing municipal sanitary sewer system. A Municipality-wide sanitary sewer model is held by Ainley Group and will be updated during detailed design to confirm that the downstream infrastructure has sufficient capacity to convey the peak flow rates produced by the proposed development.

3.3 Proposed Sanitary Servicing

The Site will be serviced by extending sanitary sewer from the current limits at the intersection of Russett Drive and Union Street. The downstream invert of the existing sanitary sewer is approximately 209.05, which is sufficiently deep to service the Site via gravity sewer. Refer to Figure 3 for the Servicing Plan.

The internal sanitary sewer will follow the center line of the internal roadway network per Municipal standards for a typical road section. Due to the relatively low peak sanitary flows calculated in the previous section it is reasonable to assume that a 200mm diameter internal sanitary sewer will provide adequate capacity to convey the wastewater to the Municipal system.

Sanitary maintenance holes will be installed with spacing consistent with Town standards. The proposed 200mm diameter internal sanitary sewer will be designed with sufficient slope to provide cleansing velocity within the sewer to reduce maintenance issues post construction.

As noted in Section 3.1.1, the Meaford Official Plan provides allocation framework which generally restricts development phases to approximately 30 units per phase where practical. Therefore, it is anticipated that the proposed development may be required to proceed as three (3) phases.

4.0 Stormwater Management

The management of stormwater and drainage for the proposed development must comply with the policies and standards of the various agencies including the Municipality of Meaford, Grey Sauble Conservation Authority (GSCA), and Ministry of the Environment, Conservation and Parks (MECP).

The stormwater management criteria for the development of the Site are listed below.

- Water Quality Control:
  - "Enhanced Protection" of 80% TSS Removal for 90% of the annual runoff volume given that Georgian Bay is the ultimate receiver.

- Water Quantity Control:
  - The proposed SWM design must control post development flows to pre-development levels for all storms up to and including the 100-year generated by the Site (on-site 'post-to-pre' control).

- Erosion Control:
  - Erosion control for the 25mm storm event.

- Development Standard:
  - Urban cross section complete with curb & gutter;
  - Lot grading at 2% optimum; and,
  - Minor and major drainage system to convey frequent and infrequent rainfall/runoff events, respectively.

4.1 Existing Drainage

The Site lies within the Meaford Creek watershed (ultimately draining north-east to Georgian Bay). The site previously consisted of cultivated agricultural lands but was recently cleared and stripped in 2020. Based on Grey County Soil Mapping (1979) the on-site soils are classified as Brighton (BRS) sand with good drainage characteristics.

Based on the topographic survey completed by Patten & Thomsen Limited in January 2021 and field reconnaissance completed by our office, the Site can be broken down into two major drainage catchments which have separate outlets and are identified in Table 1 below.

Table 1: Pre-Development Drainage Summary

Catchment ID	Catchment Area (ha)	Land Use	Catchment Slope	Outlet
101	2.95	Agricultural	1% - 2%	North East Corner of Site
102	2.39	Agricultural	1% - 2%	700mm diameter CSP Culvert crossing on Union Street

Catchment 101 consists of the northern portion of the Site which drains via sheet flow towards a low-lying area at the north-east corner of the Site. Runoff from Catchment 101 drains towards Union Street through residential lands to the north of the Site and is ultimately collected by the roadside ditch on Union Street, which has been denoted as Outlet #2 on the Pre-Development Drainage Plan (Figure 3). Our office completed field reconnaissance and confirmed there was no defined channel/outlet at the north-east corner of the Site conveying runoff to Union Street.

Catchment 102 consists of the southern portion of the Site which drains via sheet flow towards a low-lying area at the south-east corner of the Site. Runoff from Catchment 102 drains towards Union Street through a defined channel, regulated by the GSCA, and passes beneath Union Street via a 700mm diameter CSP culvert, which has been denoted as Outlet #1 on the Pre-Development Drainage Plan (Figure 3). The defined channel was identified in the topographic survey completed by Patten & Thomsen Limited and confirmed via field reconnaissance completed by our office.

It is also noted that there is a small portion of Catchment 101 that drains towards Centre Street under existing conditions; however, it has not been delineated in Figure 3 due to the relatively small size of the catchment and imperfect drainage patterns resulting from past agricultural uses and recent clearing activities.

4.2 Proposed Drainage

Following the requirements of the Municipality of Meaford, the development will incorporate a drainage system consisting of storm sewer, catchbasins and lot drainage swales (minor system) and the use of the roadway and overland flow routes (major system). Both minor and major overland flow routes will direct site runoff from developed areas toward the SWM facility. The proposed drainage system is reflected on Figure 4 which illustrates preliminary site grading, storm sewer alignment, overland flow routes and the proposed stormwater management (SWM) facility. Note final grading will be updated at the detailed design stage to refine considerations for cut / fill levels and proposed building designs as required.

The majority of the drainage from proposed developed areas of the Site will be directed to a SWM facility located on the south side of Street A at the intersection with Union Street. The SWM facility will receive runoff from approximately 3.89 ha of the development area. Major overland flows from the development area will be graded to fall to a roadway low point adjacent the SWM facility where all flow will be directed into the pond. Controlled stormwater will outlet at the south-west corner of the SWM facility through a storm pipe running to the 6.0m wide Drainage Block which conveys stormwater to Outlet #1. In the event the SWM facility outlet pipe becomes blocked, water levels will back up within the SWM facility and overtop the emergency spillway and be conveyed to Outlet #1 via the Drainage Block. Flow rates from the Regional Storm Event were modelled through the proposed Drainage Block to confirm suitable freeboard was achieved within a typical section. Refer to Appendix E for the FlowMaster Model report.

Drainage from the rear yards of some of the units fronting onto the private roadways Street B, C and D will be directed to Outlet #1 or Outlet #2. Two small post development catchments will also drain to the existing ditch on Centre Street; however, the flow rate from these catchments is minimal and should not require quantity/quality controls. The Centre Street ditch has been denoted as Outlet #3 of the Post-Development Drainage Plan (Figure 4). Refer to Table 2 below for a summary of the proposed drainage catchments.

Table 2: Post-Development Drainage Summary

Catchment ID	Catchment Area (ha)	Land Use	Outlet
201	3.89	Developed areas within the site, including all roadways	Outlet #1 via SWM Facility
202	0.35	Rear yards of units 10 – 21	Outlet #1 Uncontrolled
203	0.17	Rear yards of units 4 – 9	Outlet #1 Uncontrolled
204	0.55	Unit 17	Outlet #3 Uncontrolled
205	0.12	Street A entrance from Centre Street	Outlet #3 Uncontrolled
206	0.12	Rear yards of units 26 – 49	Outlet #2 Uncontrolled

4.3 Stormwater Quantity Control

Hydrologic modeling was prepared for the post-development site conditions using the stormwater management hydrologic computer program SWMHYMO (Sabourin, 1998). The 4-hour Chicago, 24-Hour SCS Type II and Regional Storm (Timmins) rainfall distributions were applied to the hydrologic model and were used throughout the analysis. Refer to Appendix E for full hydrologic calculations and models. The MTO Lookup Tool was utilized to determine the Intensity Duration Frequency Curves for Meaford, which were used in the calculations and are included in Appendix E. The pre- and post-development flows for Outlets #1 through #3 for the 4 hour Chicago Distribution storm events are seen in Table 3. The Post development flows represent the peak flow rates at each outlet and include both the controlled flows from the SWM facility and the uncontrolled flows from rear yards.

Table 3: SWMHYMO Method – Outlet #1, #2 & #3

Return Period (Years)	Peak Flow Rates (m^3/s)							
	Outlet #1			Outlet #2			Outlet #3	
	Pre (2.39 ha)	Post (4.41 ha)	Δ (Post-Pre)	Pre (2.96 ha)	Post (0.55 ha)	Δ (Post-Pre)	Pre (0.00 ha)	Post (0.24 ha)
2	0.025	0.021	*-0.004*	0.029	0.009	*-0.020*	N/A	0.007
5	0.048	0.034	*-0.014*	0.057	0.019	*-0.038*	N/A	0.017
10	0.064	0.042	*-0.022*	0.076	0.027	*-0.049*	N/A	0.020
25	0.091	0.056	*-0.035*	0.108	0.039	*-0.069*	N/A	0.027
50	0.111	0.066	*-0.045*	0.131	0.049	*-0.082*	N/A	0.031
100	0.137	0.079	*-0.058*	0.162	0.061	*-0.101*	N/A	0.037

Per the Municipality Engineering Standards, increases in the post-development runoff rates of any storm event should be controlled to the pre-development rates. Per Table 3, it can be demonstrated for the major 100-year storm event, peak flow rates to Outlets #1 and #2 decrease under post development conditions with a small increase at Outlet #3. However, it should be noted pre-development flows currently destined for Outlet #3 are currently underestimated.

4.4 Stormwater Quality Control

It will be necessary to implement Best Management Practices (BMP's) to address site water quality requirements. A review of environmental constraints and site-specific conditions was completed and it was concluded that an end-of-pipe wet pond for the proposed SWM facility is the preferred BMP. Lot level BMP's may also be implemented, subject to detailed grading design and soil/water table considerations. The selected BMP's incorporate erosion and sediment control measures to minimize adverse impacts on water quality and the natural environment.

Since Georgian Bay is the ultimate receiver of drainage from the subject lands, stormwater management facilities must be designed to meet the "enhanced protection" level. Enhanced protection provides an 80% long term suspended solids removal rate.

Based on the total site imperviousness (approximately 50%) contributing to the SWM facility, the water quality storage volume for a stormwater wet pond is 190 m^3/ha (MOE, 2003). This is made up of 40 m^3/ha extended detention volume and 150 m^3/ha permanent pool volume. Therefore, minimum water quality volumes required are follows:

SWM Facility – 3.89 ha Drainage Area

- Permanent Pool 584 m^3
- Extended Detention 156 m^3

These minimum required permanent pool and extended detention volumes have been provided in the preliminary SWM Facility design presented herein.

Erosion control will be incorporated within the extended detention of the pond. Sizing was based on providing a drawdown time of 24 hrs for the 25 mm rainfall event. Based on the preliminary hydrologic modeling conducted using SWMHYMO, a runoff volume of 7.69 mm was determined for the 25 mm storm event. This results in a required extended detention volume of 299 m^3 for erosion control.

5.0 Utilities

The proposed development will be serviced with natural gas, telephone, cable TV and hydro. All such utilities are currently available on the boundary roadways. Utilities have not been contacted at the time of this investigation. Circulation and coordination with the utilities will be undertaken to confirm capacity at the appropriate phase of design.

6.0 Conclusions and Recommendations

Based on the information offered in this report, we offer the following conclusions:

1. Access to the site will be provided by a public roadway (Street A), with connections to Union Street and Centre Street. Private roadways (Streets B, C & D) will branch from the public roadway.
2. A public watermain will be looped through the proposed development along Street A, with connections to the existing watermain on Union Street and Centre Street. A private watermain is also proposed which will service the units on Streets B, C & D. The existing 200mm diameter watermain that is located through an easement on the Site will be removed and plugged at the watermain on Union Street and Centre Street.
3. Capacity is presently available in the Water Treatment Plant to service the proposed development.
4. An extension of the existing sanitary sewer located at the intersection between Union Street and Russett Drive is required to service the proposed development. The existing sanitary sewer appears to be deep enough to service the Site via gravity sewer.
5. An internal sanitary sewer system will follow the alignments of the proposed roadways and provide gravity servicing to all individual units.
6. The proposed development of the Site may proceed in three (3) phases, which is consistent with the framework within the Municipality of Meaford's Official Plan for allocating the remaining capacity at the WPCP.
7. Preliminary grading has indicated that a majority of the development will drain towards the internal roadway/storm sewer network and stormwater will be conveyed to the proposed SWM Facility. The remaining areas will maintain existing drainage patterns as much as possible. Final grading will be determined during detailed design.
8. A stormwater management facility is required to service the proposed development. The land set aside for the SWM facility is adequate to provide water quality and water quantity control of the urban drainage emanating from the subject lands.

Based on the above conclusions, we recommend the approval of the Planning Applications for 425 Union Street, from the perspective of functional servicing and stormwater management. Thank you.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

George Cooper, P. Eng.
Project Engineer

C.F. CROZIER & ASSOCIATES INC.

Rebecca Alexander, P.Eng.
Project Manager

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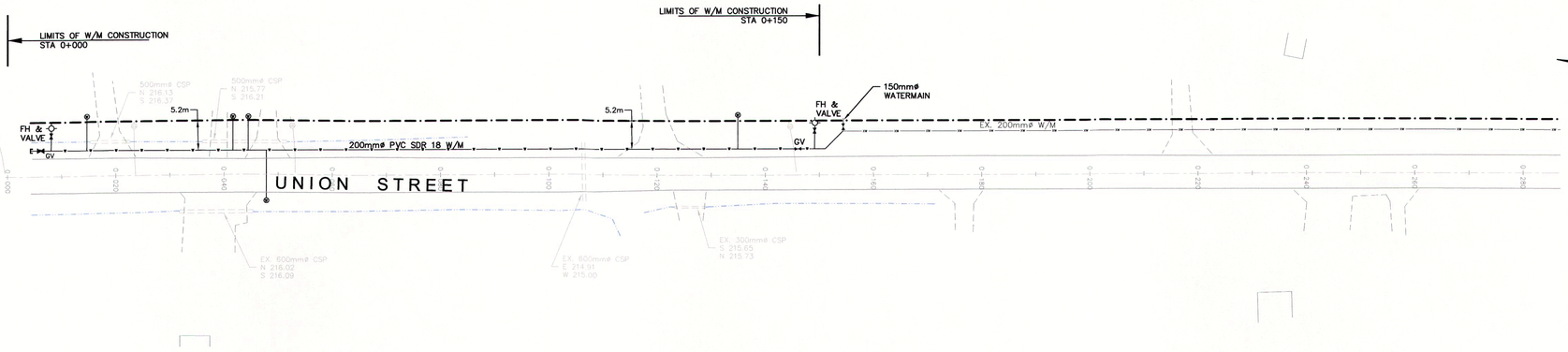
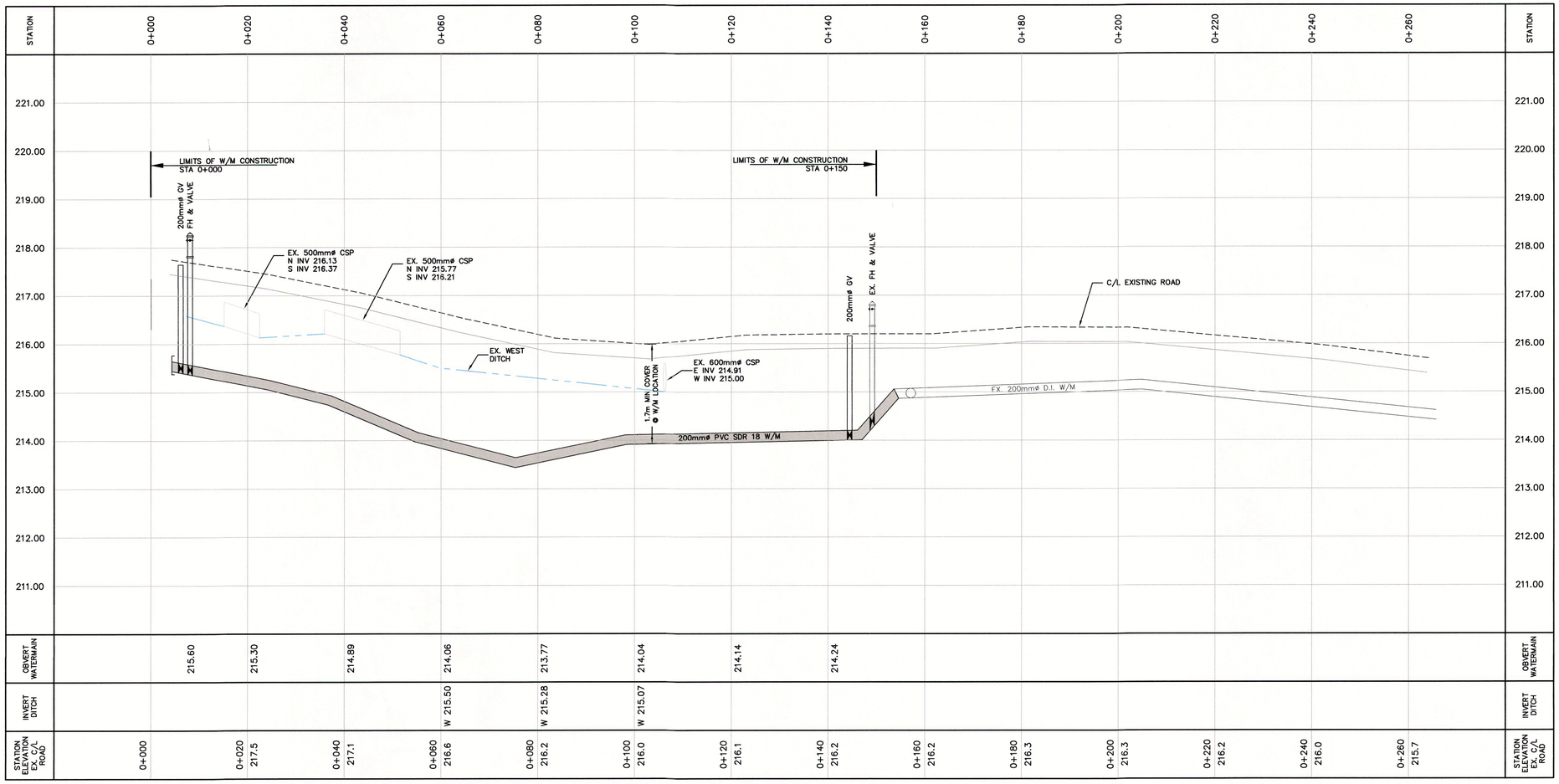
APPENDIX A

As-Constructed Drawings





GEODETIC BENCHMARK

GEODETIC MONUMENT U. No. 28U110R, ELEV. 178.092m

TEMPORARY BENCHMARKS

TBM#1 – TOP OF SIB LOCATED @ SW CORNER OF DEVELOPMENT PROPERTY ELEV. 215.182m

TBM#2 – TOP OF SIB LOCATED @ SW CORNER OF "CUT–OUT" PARCEL ADJACENT TO UNION STREET ELEV. 213.091m

TBM#3 – TOP OF SIB LOCATED @ SE CORNER OF DEVELOPMENT PROPERTY ELEV. 213.748m

XXXX-XX DENOTES – CONTRUCTION RECORD INFORMATION

CONSTRUCTION RECORD

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No.	Issue / Revision	Date: MM/DD/YYYY
0	ISSUED FOR REVIEW, 1ST SUBMISSION	09/12/2007
1	ISSUED FOR 2ND SUBMISSION	12/04/2007
2	ISSUED FOR 3RD SUBMISSION	02/11/2008
3	ISSUED FOR APPROVAL	03/19/2008
4	AS–CONSTRUCTED DRAWINGS – PHASE 1	08/15/2011

Engineer

Engineer

LICENSED PROFESSIONAL ENGINEER
K. A. MORRIS
PROVINCE OF ONTARIO

Project

GATES OF KENT CONDOMINIUMS
MUNICIPALITY OF MEAFORD

Drawing

UNION STREET PLAN & PROFILE
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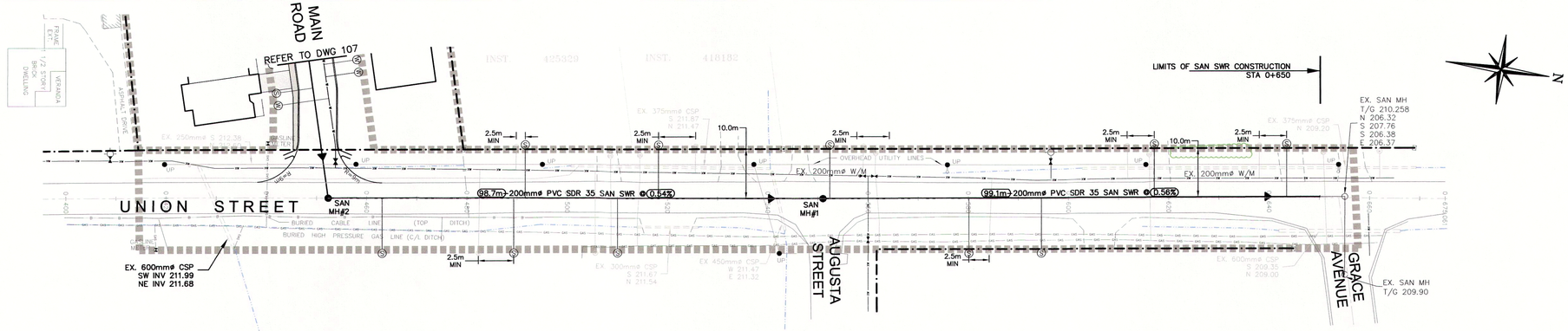
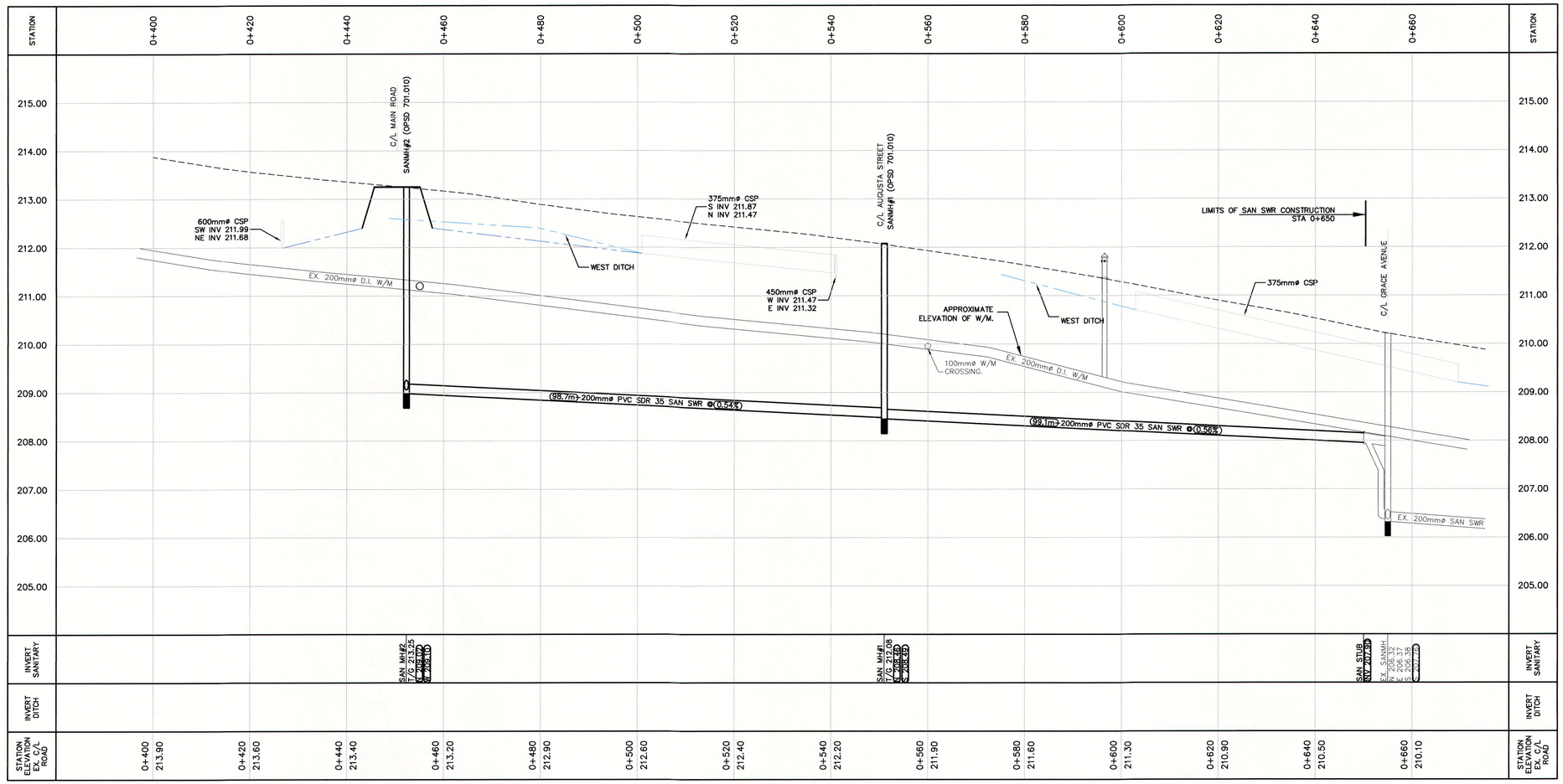
Drawn By	W.A.	Check By	K.A.M./I.T.M.	Project No.	183-2737
Scale	1:50 VER. 1:500 HOR.	Date	08/22/2007	Drawing No.	110 AC





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2	ISSUED FOR 3RD SUBMISSION	02/11/2008
3	ISSUED FOR APPROVAL	03/19/2008
4	AS-CONSTRUCTED DRAWINGS – PHASE 1	08/15/2011

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LICENSED PROFESSIONAL ENGINEER
K. A. MORRIS
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Project

GATES OF KENT CONDOMINIUMS
MUNICIPALITY OF MEAFORD

Drawing

UNION STREET PLAN & PROFILE
STA 0+400–0+680
AS–CONSTRUCTED

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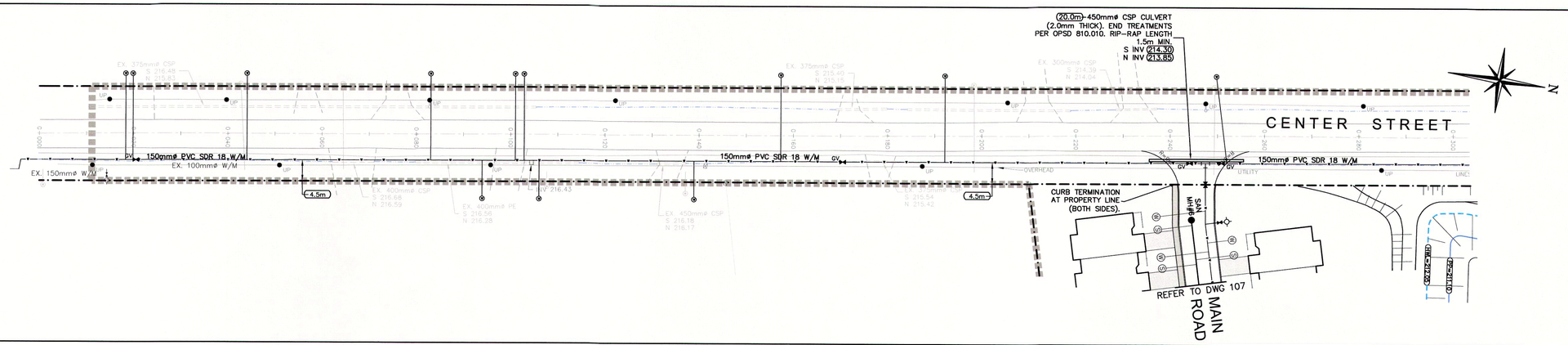

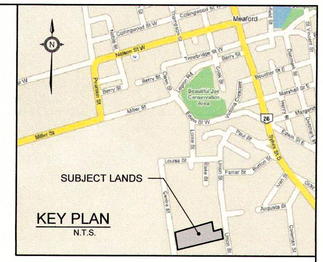

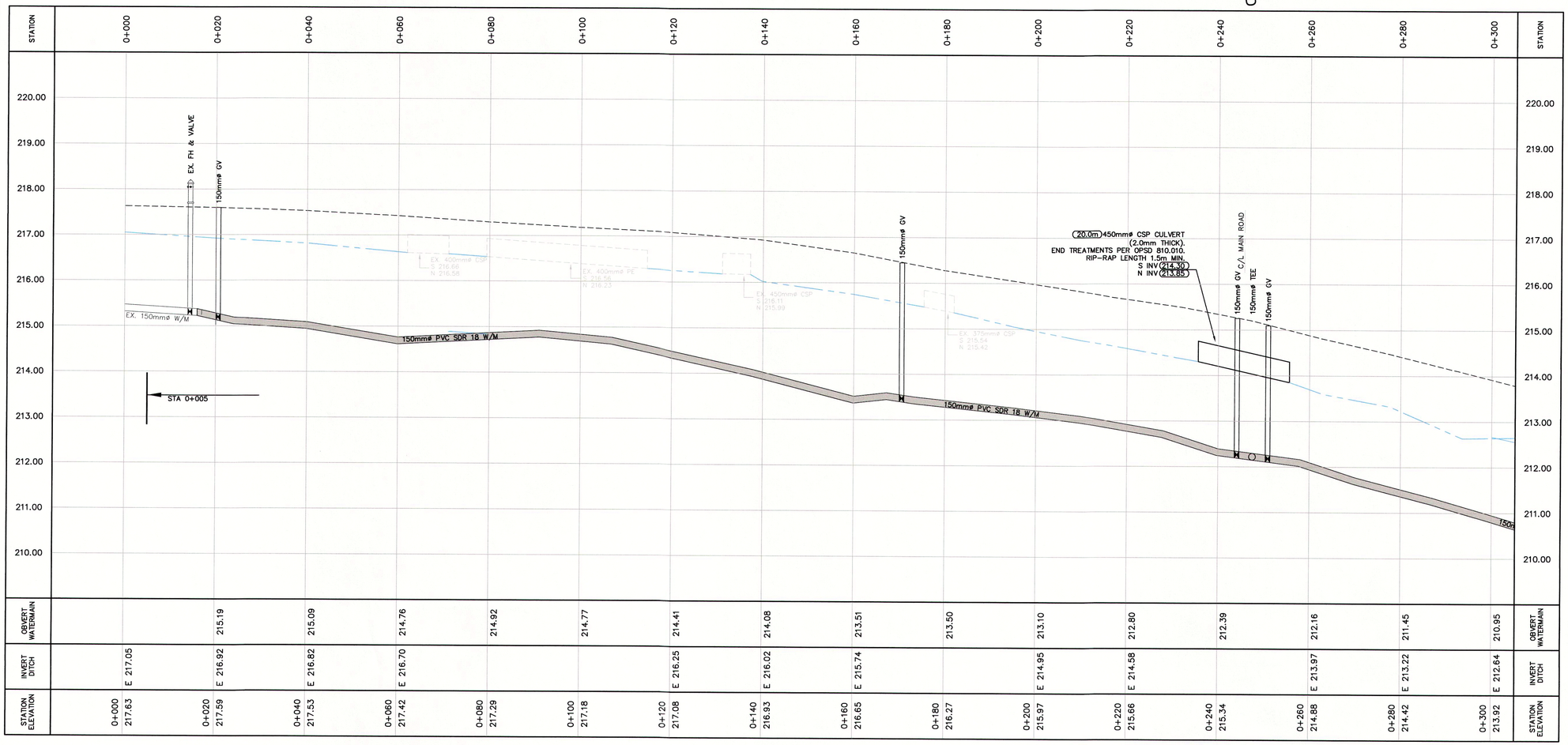

1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.
4. Do not scale the drawings.
5. All existing underground utilities to be verified in the field by the contractor prior to construction.

GEODETIC BENCHMARK

GEODETIC MONUMENT U. No. 28U110R, ELEV. 178.092m

TEMPORARY BENCHMARKS

TBM#1 – TOP OF SIB LOCATED @ SW CORNER OF DEVELOPMENT PROPERTY ELEV. 215.182m

TBM#2 – TOP OF SIB LOCATED @ SW CORNER OF "CUT-OUT" PARCEL ADJACENT TO UNION STREET ELEV. 213.091m

TBM#3 – TOP OF SIB LOCATED @ SE CORNER OF DEVELOPMENT PROPERTY ELEV. 213.748m

(XXX.XX) DENOTES – CONSTRUCTION RECORD INFORMATION

CONSTRUCTION RECORD

THIS DRAWING HAS BEEN PREPARED BY "CROZIER & ASSOCIATES CONSULTING ENGINEERS" TO REFLECT CONSTRUCTION RECORD INFORMATION AND IS BELIEVED TO BE CORRECT, HOWEVER, THOSE RELYING ON THIS INFORMATION ARE ADVISED TO OBTAIN INDEPENDANT VERIFICATION AS TO ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	Issue / Revision	Date: MM/DD/YYYY
0	ISSUED FOR REVIEW, 1ST SUBMISSION	09/12/2007
1	ISSUED FOR 2ND SUBMISSION	12/04/2007
2	ISSUED FOR 3RD SUBMISSION	02/11/2008
3	ISSUED FOR APPROVAL	03/19/2008
4	AS-CONSTRUCTED DRAWINGS – PHASE 1	08/15/2011

Engineer

Engineer

LICENSED PROFESSIONAL ENGINEER
K. A. MORRIS
Sept. 16/11
PROVINCE OF ONTARIO

Project
GATES OF KENT CONDOMINIUMS
MUNICIPALITY OF MEAFORD

Drawing
CENTRE STREET PLAN & PROFILE
STA 0+000–0+300
AS–CONSTRUCTED

CROZIER & ASSOCIATES ENGINEERS
110 PINE STREET,
COLLINGWOOD, ON L9Y 2N9
705 446-3510 T
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Drawn By W.A.	Check By K.A.M./I.T.M.	Project No.	183-2737
Scale 1:50 VER. 1:500 HOR.	Date 08/22/2007	Drawing No.	112 AC

APPENDIX B

Potable Water Demand and Fire Flow Demand Calculations

CROZIER CONSULTING ENGINEERS

File: 1923-5641
Date: May 11, 2021
By: EF
Check By: GC

425 Union Street Development - Domestic Water Demand

Developed Site Area	5.34	ha
Number of Residential Units and Land Usage		
1) Single Residential	**48**	**Units**
2) Semi-Detached Residential	**38**	**Units**
Person Per Residential Unit		
1) Single Residential (Per Water & Wastewater Servicing Master Plan, 2015)	2.4	persons/unit
2) Semi-Detached (Per Water & Wastewater Servicing Master Plan, 2015)	2.4	persons/unit
Total Residential Population	206	Persons
Domestic Water Design Flows		
Residential (Per Water & Wastewater Servicing Master Plan, 2015)	300	L/C-day
Total Domestic Water Design Flows		
Average Residential Daily Flow	0.72	L/sec
Max Day Peak Factor (Per Water & Wastewater Servicing Master Plan, 2015)	1.94	
Max Day Demand Flow	**1.39**	L/sec
Peak Hour Factor (Per Water & Wastewater Servicing Master Plan, 2015)	2.92	
Peak Hour Flow	**2.09**	L/sec

425 Union Street

May 27, 2021

Fire Protection Volume Calculation - Semi Detached Units

CFCA File: 1923-5641

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

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

where

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

Proposed Buildings		Fire resistive construction
270	sq.m. total floor area	1.0 C

Therefore F= 4,000 L/min (rounded to nearest 1000 L/min)

Fire flow determined above shall not exceed:
30,000 L/min for wood frame construction
30,000 L/min for ordinary construction
25,000 L/min for non-combustible construction
25,000 L/min for fire-resistive construction

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Buring	25%
Combustible	No Charge		

Low fire Hazard occupancy for dwellings	0% reduction

0 L/min reduction

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduce by up to 50% for complete automatic sprinkler protection.

Buildings will have automatic sprinklers (typical 30% reduction)
0 L/min reduction

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) esposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

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

Exposed buildings

Name		**Distance**		
North	Adjacent Dwelling	22	10%	400
East	Adjacent Dwelling	2.4	25%	1000
South	Adjacent Dwelling	15	15%	600
West	Adjacent Dwelling	2.4	25%	1000
				3,000 L/min Surcharge

Determine Required Fire Flow

No. 1	4,000		
No. 2	0	reduction	
No. 3	0	reduction	
No. 4	3,000	surcharge	
Required Flow:	**7,000**	**L/min**	
Rounded to nearest 1000l/min:	**7,000**	**L/min**	or 116.7 L/s
			1,849 USGPM

Determine Required Fire Storage Volume

Flow from above	7,000	L/min
Required duration	2.00	hours
Therefore:	840,000	Litres or
	840	cu.m. is the required fire storage volume.

Required Duration of Fire Flow

Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

Fire Protection Water Supply Guideline
Part 3 of the Ontario Building Code (2006)

$$Q = KVS_{TOT}$$

Q = minimum supply of water in litres (L)
K = water supply coefficient
V = total building volume in cubic metres
S_{TOT} = total of spatial coefficient values from property line exposures on all sides

K =	23.0	Group C building with combustible construction (Table 1)
V =	1485	Total building volume in cubic metres
S_{TOT} =	2	S_{TOT} Need Not Exceed 2.0

Q = 68310 L

Based on ranges listed in Table 2, the required minimum water supply flow rate is **2700 L/min**

45 L/s

425 Union Street

May 27, 2021

Fire Protection Volume Calculation - Single Detached Units

CFCA File: 1923-5641

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

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

where

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

Proposed Buildings		Fire resistive construction
220	sq.m. total floor area	1.0 C

Therefore F= 3,000 L/min (rounded to nearest 1000 L/min)

Fire flow determined above shall not exceed:
30,000 L/min for wood frame construction
30,000 L/min for ordinary construction
25,000 L/min for non-combustible construction
25,000 L/min for fire-resistive construction

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Buring	25%
Combustible	No Charge		

Low fire Hazard occupancy for dwellings	0% reduction

0 L/min reduction

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduce by up to 50% for complete automatic sprinkler protection.

Buildings will have automatic sprinklers (typical 30% reduction)
0 L/min reduction

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) esposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

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

Exposed buildings

Name		**Distance**		
North	Adjacent Dwelling	22	10%	300
East	Adjacent Dwelling	2.4	25%	750
South	Adjacent Dwelling	15	15%	450
West	Adjacent Dwelling	2.4	25%	750
				2,250 L/min Surcharge

Determine Required Fire Flow

No. 1	3,000		
No. 2	0	reduction	
No. 3	0	reduction	
No. 4	2,250	surcharge	
Required Flow:	**5,250**	**L/min**	
Rounded to nearest 1000l/min:	**5,000**	**L/min** or	83.3 L/s
			1,321 USGPM

Determine Required Fire Storage Volume

Flow from above 5,000 L/min

Required duration 1.75 hours

Therefore: 525,000 Litres or
525 cu.m. is the required fire storage volume.

Required Duration of Fire Flow

Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

Fire Protection Water Supply Guideline
Part 3 of the Ontario Building Code (2006)

$$Q = KVS_{TOT}$$

Q = minimum supply of water in litres (L)
K = water supply coefficient
V = total building volume in cubic metres
S_{TOT} = total of spatial coefficient values from property line exposures on all sides

K =	23.0	Group C building with combustible construction (Table 1)
V =	1210	Total building volume in cubic metres
S_{TOT} =	2	S_{TOT} Need Not Exceed 2.0

Q = 55660 L

Based on ranges listed in Table 2, the required minimum water supply flow rate is **2700 L/min**

45 L/s

APPENDIX C

Municipal Staff Report (Dated November 30, 2020)

Date	Monday, November 30, 2020
From	Rob Armstrong, CAO / Director of Development Services
Subject	**Meaford WWTP Servicing Allocation**
Report No. CAO2020-23	**Roll No.** N/A

Recommendation

That Committee of the Whole recommend Council of the Municipality of Meaford:

1. Direct staff to advise the development community in writing of the current capacity constraint at the Meaford Waste Water Treatment Plant and the process the Municipality plans to take to address this issue;
2. Direct staff to develop an Inflow and Infiltration (I and I) Strategy to address critical areas of I and I within the system with the intent to obtaining additional capacity at the sewage plant; and
3. Direct staff to develop an uncommitted sewage reserve capacity implementation plan for future development in accordance with the policies of the Official Plan in consultation with the County of Grey and applicable Ministry.

Background

Existing EA

In 2007 the Municipality retained the services of Earth Tech Canada Inc. to complete a Schedule C Municipal Class Environmental Assessment (Class EA) for potential expansion of the Waste Water Treatment Plant (WWTP). The Class EA was triggered by the capacity analysis completed by Ainley and Associated Limited in 2006 and peer reviewed by Hydromantis, Inc. The capacity analysis identified that the plant capacity was over 80%. Since 2007 the average daily flow (ADF) have fluctuated between 55% and 80% of the rated plant capacity.

The 2007 Class EA utilized past and current population trends within Grey County to develop a 20 year planning population of 11,500 in urban

Meaford. The Class EA evaluation utilized this population to develop and evaluate alternatives. A combination of alternatives were identified as preferred including:

- Expand Existing Plant On-Site and Purchase Immediately Adjacent Property for Buffer/Flexibility
- Optimize Plant Operation
- Reduce Inflow and Infiltration and Improve Water Conservation

The capital costs required for the expansion to the existing plant were identified in 2007 to be $18,425,000 with an additional $3 million dollars required to add tertiary treatment to the plant.

Following completion of the 2007 Class EA it was determined that the Municipality did not have necessary funds to proceed with the preferred solution identified in the evaluation. In 2010, Genivar Consulting LP was retained by the Municipality to re-evaluate the design population and consider alternative options with reduced funding requirements to expand the plant capacity for future development. The revised evaluation identified a 20% expansion to the existing plant which would add capacity of approximately 605 residential units.

The work completed by Genivar included consultation with Indigenous communities that was not thoroughly completed as part of the 2007 Class EA as it was not a requirements at the time. Following completion of the report the Ministry of the Environment, Conservation and Parks (MECP) was contacted to determine next steps with regards to the Class EA process. Through the communication with the MECP it was identified that an addendum to the existing Class EA would be require to change the background information and to proceed with an alternative that differs from the preferred alternative identified in the existing Class EA.

Following completion of the evaluation by Genivar the Municipality proceeded with the initiation of the Class EA addendum process in 2015 obtaining proposals to complete the work. During the proposal review processes it was determined that the Municipality would no longer proceed with the project at that time as the wastewater volumes were at a decade low with the plant capacity only at 56%.

To date no further steps have been taken to complete the Class EA addendum. To proceed with the expansion of the WWTP the Municipality would have to complete the addendum. The addendum will include an

evaluation of the current population and development information as well as evaluate new technologies and opportunities to have phased expansion of the WWTP.

Current capacity

Annually the Municipality completes Capacity Allocation reports for the WWTP as the current plant is nearing capacity. The 2019 report identified that the 3-year average daily flow (ADF) at the plant is 75.8% of the rated capacity with the highest historical ADF in the past 3 years occurring in 2017. The peak flows at the plant exceeded the rated capacity and can be attributed to heavy rainfall and snowmelt. The significant peak flows confirms that excessive extraneous flow enter into the waste water collection system resulting in a large volume of storm water being treated unnecessarily by the WWTP.

An increase in CBOD influent concentration shows that the ongoing efforts to reduce extraneous flow are having a positive impact on the reduction of inflow and infiltration entering the wastewater system however it is recommended that efforts continue as part of the extraneous flow reduction program identified in the 2015 Water and Wastewater Master Plan.

The 2019 Report identified that there are currently 454 unconnected approved lots within the urban area of which 235 are existing lots and infill lots that are currently not serviced by sewer but are capable of being connected. Once these lots are connected to the distribution system the plant capacity will be at approximately 82%. The depleting ledger included in Appendix 1 outlines all existing, unconnected approved lots, and proposed and potential development connections within the distribution network, providing a long-range projection of needs at the WWTP.

Inflow and Infiltration

The Municipality has completed projects over the years to deal with the existing extraneous flow problem that is experienced in the wastewater collection system. The high inflow and infiltration is a result of wastewater mains and maintenance holes in poor condition that allow ground water to enter the system, and storm water connections from properties to the wastewater system.

In recent years the following projects have been completed to specifically reduce extraneous flows:

- 2015 Meaford Sewage Collection System Inflow and Infiltration Study, Ainley and Associates
- 2015 Meaford Sewage Collection System Smoke Testing Study, Ainley and Associates
- 2017 Wastewater Main Relining on Ivan Street, Sykes Street and Paul Street
- 2020 Wastewater State of the Infrastructure and Maintenance Hole Inspection

All wastewater infrastructure projects that allow for wastewater main and maintenance holes to be replaced also help to eliminate possible inflow that previously entered into the system through cracked and deteriorated infrastructure.

Official Plan

As part of the 2014 update of the Official Plan, the Municipality included a number of Servicing Policies including Section D1.9 – Municipal Servicing. With regard the limitations at the WWTP and proposed development, the following sections need to be considered in relation to this issue.

Sections D1.9.1 Reservation and Allocation Limitations addresses when commitments are made to both design and existing capacity of the WWTP and how phasing can occur. Section D1.9.2 Use of Holding Zones identifies how the lands can be zoned for development with the holding symbol and then lifted when confirmation of available capacity is completed. D1.9.3 Staging Priorities outline various criteria to which Council can give allocation. With it being noted that it is not necessarily tied to first come- first serve. The full policies are included in Appendix 2 to this report.

Analysis

Current Development Potential

The Municipality is experiencing significant pressures related to development. There have been a lot of properties over the last few years where interest has been expressed for development, however many are now moving to the approvals and construction stage. As highlighted in the depleting ledger noted in Appendix 1, in order to consider the development anticipated, the Municipality will need to proceed and address plant capacity.

Inflow and Infiltration

As identified in all major system reviews the Meaford wastewater collection system has significant extraneous flow issues. In a new system with limited I&I it would be expected that the quantity of water treated at the water treatment plant would match the wastewater treated at the WWTP. A good local example of this is the Town of Wasaga Beach where they produced 2,521,087m^3 of drinking water and treat 2,347,885m^3 wastewater in 2019. In Meaford in 2019 there was 598,532 m^3 of drinking water produced however 1,073,343m^3 of wastewater was treated. To further emphasize the problem, the Municipality has 45% more units, equal to 930 residential properties, connected to the water distribution system in urban Meaford that are not connected to the wastewater system and therefore the amount of water treated should be higher than the wastewater treated if extraneous flow was not an issue. The extraneous flow is contributing to over half of the wastewater treated at the WWTP based on this review.

The issue with I and I is that it does not result in an immediate ability to provide additional allocations. This is based on the fact that capacity is based on a three year average. It has been the position of staff that it is more economical to address the existing I and I issues, then proceeding with a more expensive expansion of the plant that could be considered premature. That is the key reason why the WWTP expansion has not proceeded.

The Municipality may wish to proceed with an aggressive plan to address the I and I and finance the works through debt. This could be equivalent to the user pay portion of the plant expansion. In order to consider this, staff would need to bring a report forward to Council that outlines the project with costing for Council consideration.

WWTP Amended Environmental Assessment and Plant expansion

As identified by the MECP following the 2007 Class EA any significant modifications to the project which occur after completion of a Class EA processes result in an addendum to be completed. The addendum will identify the circumstances necessitating the change, the environmental implications of the change and any new mitigation measure that will be implemented as part of the addendum. The addendum will be filed with the MECP with the original document and will be provided to all potentially affected members of the public and review agencies that were notified as part of the original Class EA. It will be made clear through the addendum

process which items are under review and only those items will be available for comment.

Another component of the Class EA process that is relevant to the Municipality for this project is timing of construction with relation to the completion of the Class EA. Following completion of a Schedule C Class EA the proponent has 10 years to commence construction of the preferred alternative. If a lapse of time occurs, the proposed project and environmental mitigation measures may no longer be valid. Following the 10 year period the proponent must complete a review of the planning and design process and the current environmental setting to ensure the recommendations are still valid. The review must be recorded in an addendum to the existing document and is to be placed on public record. This further highlights the need to complete an addendum to the existing Class EA that was completed in 2007. The proposed 2021 budget includes the commencement of the Environmental Assessment process.

The next steps if an addendum to the existing Class EA is the preferred direction forward are as follows:

1. Retain a consultant to complete a review of the existing Class EA and identify which components will need to be revised as part of the addendum. The addendum will include an evaluation of the background information, preferred alternative, preferred design and environmental mitigation measures to ensure that a phased approach is developed, if possible, to meet the needs of our current and future population within the Meaford wastewater collection area. The addendum processes will include public, agency and indigenous consultation for all changes made to the original document. It is typical that this processes could take 1-2 years to complete depending on the complexity of the changes and the public and agency consultation. The Town of Collingwood recently completed a similar processes for their Water Treatment Plant and the addendum process was approximately 1 year.
2. Following completing and filing of the Class EA addendum the project will proceed to detailed design of the preferred alternative identified through the addendum. This project will include complex engineering design and extensive review by the MECP through the Environmental Compliance Approval processes. It is anticipated that detailed design will be approximately 18 months but could vary depending on the outcome of the Class EA addendum.

3. Construction of the WWTP expansion can proceed following completion of detailed design. Depending on the final outcome of design the construction is estimated to take between 1-2 years.

Throughout the process outlined above there will be other items that will need to be completed concurrently with the design process. For example, based on the existing Class EA, the Municipality will need to acquire land adjacent to the existing WWTP to create a buffer zone. These items are not anticipated to affect the timeline at this point however if complications are experienced there could be delays to the process.

Official Plan Update

The Municipality currently has identified a project to update the current Official Plan. This update is required based on a number of factors including addressing compliance matters related to the approval of the new County of Grey Official Plan, as well as a review of the vision for the Community, particularly as it relates to growth. Some of these considerations will include consideration of minimum densities for development and identification of priority areas for growth which directly relate to the allocation required within an expanded WWTP. It is appropriate for the Official Plan update to be considered in conjunction with the Class EA process

Financial Impact

Development Charges

With the 2010 update to the Development Charges By-law, the Municipality identified the expansion of the WWTP as a capital project and started collecting a charge from new development in the existing urban area for this expansion. In 2010, the Background Study identified that the WWTP contract would be $9,320,000, of which $9,248,212 would be attributed to growth. In addition, there was a $5,010,000 financing cost that was also identified. This resulted in a charge per residential unit of $7,029 (single or semi) and $5,624 (apartments and townhomes). The non- residential charge was $63.71 per square metre.

In 2015, these numbers were updated and broken out into defined projects as outlined in Appendix 2. The total cost of all projects was $26,737,000, of which $21,242,345 was to be funded from growth (approximately 80%).

The 2019 Development Charge Year End Report noted that currently, the Municipality is holding $ 1,184,341.11 in reserves for works at the WWTP

related to the expansion. These funds are expected to be enough to cover the cost of an updated EA and the design engineering costs for an expansion.

Debt capacity

As noted, cost for this project are significant and the current amount held in Development Charges is well less then what would be required to expand the plant. In this regard, any expansion to the plant would need to be fully funded from debt, with the costs (construction plus interest) being recovered through Development Charges (80%) and future user fees (20%). When considering the use of debt, the Municipality must be aware of the impacts on our debt capacity, especially for a project of this scale. Currently our annual debt repayment limit sits at approximately $5.47M. This accounts for both existed and proposed debt as outlined in the 2021 budget documents. The remaining annual repayment limit is approximately $4M after removing existing debt, 2021 repayments for the Library and Thompson Street and 2022 repayments for the Nelson Street Booster Station and Gillies Bridge. This would allow the Municipality to borrow up to $60M at 4% over 25 years or $45M at 4% over 15 years.

Implications

If the Municipality were not to proceed with addressing the capacity at the existing WWTP, any planning approvals that would exceed the allocation of the plant would be in conflict with the Provincial Policy. This would include the consideration of some key developments desired by this community.

Further, the Municipality has included the expansion of our WWTP within our Development Charges since 2010, which demonstrates a commitment to this project.

Council also needs to understand the significant risk in proceeding with the plant expansion. In particular, the reliance on continuous new development to fund the annual debt payments related to the expansion of the plant.

Strategic Priorities

This report supports the mission, vision and values of the Municipality of Meaford, as well as the goals and objectives set out in Council's Strategic Priorities, particularly with respect to:

- Investing in Infrastructure

Consultation and Communications

With the majority of developments, Staff have noted that the Municipality does have WWTP capacity limitations and that we continue to monitor the situation. It also noted that one of the key considerations when Developers acquire land for development is satisfying themselves that capacity is available for their proposal.

Staff have also consulted with the County of Grey Planning Department

Conclusion

Based on the foregoing, it is recommended that the Municipality formally advise the development community of the current constraints related to the WWTP capacity. Further staff recommend that two plans be developed. One being an Inflow and Infiltration strategy that will consider priority investment in infrastructure that optimizes the operation of the WWTP and the creation of additional capacity. The other being an uncommitted sewage reserve capacity implementation plan to address future development. This would include establishment of priorities and phasing.

Supporting Documentation

Appendix 1 – 2019 Depleting Ledger – Ainley Group
Appendix 2 – Official Plan excerpts

Respectfully Submitted:

_____
Rob Armstrong, CAO / Director of Development Services

_____
Tori Perejmybida
Director of Infrastructure Services

CAO2020-23
Appendix 1

MEAFORD WATER POLLUTION CONTROL PLANT RESERVE CAPACITY
DEPLETING LEDGER
NOVEMBER 2020

Design Capacity	3910	m³/d
Average Day Flow (3 yr. avg.)	2965.3	m³/d
Hydraulic Reserve Capacity (Cu)	945	m³/d
Estimated flow from Residential Units[1]	2694.0	m³/d
Estimated Number of Residential Units[2]	2219	
Population[3]	4749	persons
Population Density - Existing, estimated	2.1	people per unit (ppu)
Current Average Day Flow (per Capita)	567.3	L/cap/day
Average Day Flow (actual per equivalent residential unit)	1.214	m³/unit/day
Future Population Density[4]	2.400	people per unit (ppu)
Average Day Flow (future per capita)[5]	540	L/cap/d
Average Day Flow (future per equivalent residential unit)[5]	1.296	m³/unit/day

DEVELOPMENT	NUMBER OF EQUIVALENT RESIDENTIAL UNITS	PERSONS PER UNIT[2,4]	DEVELOPMENT EQUIVALENT RESIDENTIAL POPULATION	DEVELOPMENT TYPE	DEVELOPMENT ADF (m³/d)	CUMULATIVE EQUIVALENT POPULATION	CUMULATIVE ADF (m³/d)	CUMULATIVE PERCENT OF DESIGN (%)	*CAPACITY* REMAINING (m³/d)	REMAINING EQUIV. RES. UNITS (1.296 m³/unit.d)
DESIGN CAPACITY										
Existing Connections - Serviced										
[1, 2] Residential Connected to existing system	2219	2.14	4749	Residential	2684	4749	2683.5	68.6	1226.5	946
[3] Commercial / Industrial Connected to existing system	99	2.14	213	Commercial	121	4962	2804.2	71.7	1105.8	853
[3] Institutional Connected to existing system	132	2.14	282	Institutional	160	5244	2964.2	75.8	945.8	730
Septic Disposal	1	2.14	2	Septic	1	5246	2965.3	75.8	944.7	729
Existing - Unserviced										
Existing Lots other than Committed Plans, unserviced by sewer in current extent of infrastructure	83	2.4	199	Various	107.6	5445	3072.9	78.6	837.1	646
Infill Lots	15	2.4	36	Various	19.4	5481	3092.3	79.1	817.7	631
Committed Reserve Capacity, in Approved Plans										
Coleman Street	11	2.4	26	Residential	14.3	5507	3106.6	79.5	803.4	620
Golf Course Villas (19 Connected, 1 Remaining)	1	2.4	2	Residential	1.3	5510	3107.9	79.5	802.1	619
Golfview (21 connected, 5 remaining)	5	2.4	12	Residential	6.5	5522	3114.4	79.7	795.6	614
Golf Course Development (Life Lease Development)	40	2.4	96	Residential	51.8	5618	3166.2	81.0	743.8	574
Pinehurst	27	2.4	65	Residential	35.0	5683	3201.2	81.9	708.8	547
Ridge Creek (13 connected, 1 remaining)	1	2.4	2	Residential	1.3	5685	3202.5	81.9	707.5	546
St. Andrews (27 connected, 7 remaining)	7	2.4	17	Residential	9.1	5702	3211.6	82.1	698.4	539
Proposed Developments (Capacity Not Committed)										
Collingwood Street [7]	40	2.4	96	Residential	51.8	5798	3263.4	83.5	646.6	499
Cook Street [7]	11	2.4	26	Residential	14.3	5824	3277.7	83.8	632.3	488
Golf Course Development (Hilton Heights Development)	51	2.4	122	Residential	66.1	5947	3343.8	85.5	566.2	437
Kennedy Property	249	2.4	598	Residential	322.7	6544	3666.5	93.8	243.5	188
Legion	120	2.4	288	Various	155.5	6832	3822.0	97.7	88.0	68
Meaford Haven	400	2.4	960	Various	518.4	7792	4340.4	111.0	-430.4	-332
Nelson Street East	45	2.4	108	Residential	58.3	7900	4398.7	112.5	-488.7	-377
Plaza	254	2.4	610	Commercial	329.2	8510	4727.9	120.9	-817.9	631

Redevelopment of Meaford Community School 128 LTC beds 120 Retirement Home 19 Townhomes	158	2.4	379	Residential	204.8	8889	4932.7	126.2	-1022.7	-789
Stanley Knight Property - North Corner of the property: restaurant, bar, indoor / outdoor infinity pool, spa, 68 hotel rooms, 6 luxury condominiums.	54	2.4	130	Commercial	70.4	9019	5003.0	128.0	-1093.0	-843
Stanley Knight Property - One parcel - 150 residential condominiums One parcel – 50 units/50 units	250	2.4	600	Residential	777.6	9619	5780.6	147.8	-1870.6	-1443
Sykes Street	52	2.4	125	Residential	67.4	9744	5848.0	149.6	-1938.0	-1495
Other - Potential Development, land fronting or within reasonable distance to existing sanitary collection system (Capacity Not Committed) [8]										
Industrial [9]	27	2.4	65	Industrial	35.0	9809	5883.0	150.5	-1973.0	-1522
Commercial [10]	267	2.4	640	Commercial	345.5	10449	6228.6	159.3	-2318.6	-1789
Underutilized[11]	264	2.4	634	Various	342.2	11082	6570.7	168.0	-2660.7	-2053
74 Bayfield / former Moose	60	2.4	144	Various	77.8	11226	6648.5	170.0	-2738.5	-2113
Special Policy Area 1	120	2.4	288	Various	155.5	11514	6804.0	174.0	-2894.0	-2233
Allowance for Septage from Septic Tanks[12]	6	2.4	15	Septic	8.1	11529	6812.0	174.2	-2902.0	-2239
Other - Potential Development, land not within reasonable distance to existing sanitary collection system (Capacity Not Committed) [13]										
Industrial [9]	589	2.4	1413	Industrial	763.3	12293	7575.3	193.7	-3665.33	-2828

Note: All development proposals are listed in alphabetical order. Therefore, no preference nor priortity is to attributed to any proposed development over another.
Estimated flow from residential dwellings calculated based on: Average annual flow less leachate, septic disposal and estimated flow from Industrial, Commercial and Institutional
Number of existing residential units based on 1818 single family dwelling residential units and 27 apartment style complexes and condominiums with a total of 401 residential dwellings.
The Annual Performance Reports prepared by OCWA and by the Municipality indicate that the Serviced Population is 4,340. The same population is listed for the 2018 report as the 2017 and 2016 reports. In order to account for 81 more residential connections in 2018 than in 2016 the Serviced Population is estimated to be 4340+2.1*82= 4,510. The existing population density was estimated to be 2.1 in the 2016 Capacity Update.
For future calculations, a population density of 2.4 was used, per the Municipality.
Future development flows have been calculated based on MECP standard per capita flows and standard allowance for I&I inflow.
The MECP Standard Per Capita flow is 450 L/cap/day and the standard allowance for I&I flow is 90L/cap/day = 540L/cap/day
The leachate contract with the City Owen Sound has not been renewed. August of 2017 was the last time Meaford received leachate from Owen Sound. As such, the leachate that previously contributed to flows was removed from the ledger
Zoning Approved (Site Plan Approval Required)
Based on proximity to the existing sanitary collection system it is feasible these lands could be developed and serviced within a 10-year time frame.
Sanitary flow for lands currently zoned Industrial based on $28m^3$/ha/day. This is consistent with the latest Sewer Model and is considered to be conservative. The area is total of all lands zoned Industrial and identified for future potential development.
Sanitary flow for lands currently zoned Commercial based on $28m^3$/ha/day. This is consistent with the latest Sewer Model and is considered to be conservative.
Land identified as "underutilized" in the Master Plan. These lands are currently developed and have sanitary services, however they have been identified as having potential for higher density development.
Sanitary flow for lands identified as "underutilized" based on $28m^3$/ha/day. This is considered to be conservative. It is recommneded that more refined numbers may be developed as potential land uses are proposed.
Existing flow has not been identified and subtracted. The area is total of all landsidentified as Underutilized.
Per discussions with the Municipality, an allowance was made for septage from all septic tanks to be accepted at the wastewater treatment plant, to allow for the potential of by-law restrictions of land application of this waste.
The Muncipality advised that there are 3,500 Septic Tanks in the Municipality. The frequency that a septic tank should be pumped is dependant on the size of the tank and the number of occupants in the residence.
A very general rule of thumb is every 3 - 5 years. The calculation to allow for the WPCP to receive septage from all the septic tanks in the Municipality assumes that each tank is pumped every 5 years. Thus, 1/5 of the tanks would be pumped each year.
While there is potential for development for these lands based on zoning, the distance from the established sanitary collection system makes it unlikely that they would be developed in the short term.

Appendix 2

Official Plan Excerpts

D1.9.1 Reservation and Allocations Limitations

1) The monitoring of service capacity is intended to identify the availability of required municipal water and sewage services for existing and future development. The commitment of servicing capacity shall be subject to the priorities outlined in Section D1.9.3. Development approvals shall be restricted on the basis of design capacity limitations.

2) The design capacity of the applicable water and sewage treatment plant facilities shall be reserved for all units within any site plan, plan of subdivision and plan of condominium development approvals, including all residential and non-residential development. Where such reservation of design servicing capacity is not available, any application for development shall be considered to be premature, and development approvals shall not be given.

3) The existing plant capacity of the applicable water and sewage treatment plant facilities shall only be allocated for units within any approved development or phase of approved development. Phasing of development and allocation of existing plant capacity shall be provided under the required development agreement. Where such allocation of existing plant capacity is not available, the development, or phase of development shall not proceed.

4) The Municipality shall have regard for competing demands for servicing capacity and proposed schedules of build out when considering commitment of plant capacity, with particular regard for appropriate servicing limitations related to phases of large developments. The allocation of existing plant capacity shall be generally be restricted to development phases of approximately thirty (30) units, where practical. The remaining development potential for the lands may be placed in a holding category and reservation from the design capacity may also be deferred for some future development phases where further detailed development approvals are required. Once the current phase of development has been substantially completed, a subsequent phase may advance to obtain allocation subject to the availability of existing plant capacity at that time, rezoning for the removal of any holding symbol and any other applicable requirements. Larger phases shall generally not be permitted, except as may be permitted under paragraph (5). In addition to development phasing, the commitment of plant capacity shall normally be subject to appropriate securities and time limitations.

5) It is recognized that larger phases of development may be necessary in some circumstances to facilitate proposed development, such as a single multiple residential building containing more than thirty (30) units. Larger phases of development may also be considered necessary to help finance a municipal servicing project. Such larger phases shall only be permitted where smaller phases are not practical and where the Municipality is satisfied that there will be no negative impact on the priorities for other existing and future development as further provided under Section D1.9.3.

In some cases, development approvals and the commitment of plant capacity may be more appropriately deferred for future development phases. The Municipality may refuse to approve large scale development proposals in excess of one hundred (100) units. Larger development proposals may be included under a concept plan with future development phases. Lots or blocks may also be established under plan of subdivision approvals, with future detailed plan of subdivision or other applicable development approvals to be required. The commitment of plant capacity may also be deferred for such lands.

6) Draft plan of subdivision or condominium approvals and reservation of existing design capacity shall lapse after three years unless an extension is approved.

7) Notwithstanding the above, an extended lapsing period may be allowed in relation to municipal servicing projects where a longer period of time may be required to help finance the project, the duration to be determined relative to the scale of the project. In no case shall any development approval be granted with an initial lapsing period of more than eight (8) years. Any extension of development approvals must be obtained prior to lapsing and may only be recommended for one (1) year intervals where the Municipality is satisfied that development will proceed.

D1.9.2 Use of Holding Zones

1) Holding zones shall be established under the implementing Zoning By-law to recognize the commitment of design capacity. The allocation of existing plant capacity under development agreement shall be a condition of any rezoning.

2) All lots or blocks within a plan of subdivision or condominium shall generally be placed in a holding (h) zone under the implementing Zoning By-law until such time as all necessary approvals for development have been obtained and

existing plant capacity allocation is available, amongst any other relevant matters.

3)Where lots or blocks for future development are proposed under a Concept Plan or included under a plan of subdivision, and approved on the basis that design capacity is not yet available or that further detailed development approvals are required, such lands shall be placed in a holding or other appropriate zone under the implementing Zoning By-law.

D1.9.3 Staging Priorities

1) It is the intent of this Plan to direct the development of priority areas within the Urban Area based on the availability of servicing capacity. These priority areas should promote infilling and the logical extension of growth in an efficient manner, which will also help promote the extension of municipal services to existing development areas.

Staging priorities should recognize competing demands for limited available servicing capacity and direct development toward primary areas which are intended to be developed first.

2) Priority for development should be given to lands which meet one or more of the following criteria:

a. Lands that have development approvals and are zoned to permit development. The allocation of existing servicing capacity is to be established under a Development Agreement.

b. Lands located within Service Area #1 (Downtown) as established via the Municipal Development Charges By-law, as may be amended.

c. Existing development which can connect to existing municipal service lines.

d. Existing development where environmental servicing concerns have been identified.

e. Existing development located in close proximity to existing municipal service lines and is likely to be serviced.

f. Lands to be serviced with participation in a municipal servicing strategy to expand municipal treatment plant facilities and/or extend municipal service lines.

g. Lands which can be considered infilling development.

h. Lands to be developed which are considered to be a public benefit to include recreational amenities, public trails, proposed park dedications, affordable housing, or municipal servicing facilities, and could also qualify as bonus zoning provisions.

i. Lands to be developed which are otherwise considered to be a public benefit.

3) Service allocation shall not necessarily be given on a first come basis. A higher priority should be given to lands which can satisfy several staging priority criteria.

The Municipality may refuse to grant service allocation where it is to be reserved for other priority areas. A holdback will be retained to accommodate existing unserviced vacant lots within the extent of servicing, limited infill and industrial development.

4) Developers may be required to finance the cost of municipal service infrastructure which are required in order to obtain development approvals, with suitable provisions for reimbursement of the cost for works which benefit other lands, where appropriate. Developers may also be required to participate in municipal servicing projects which are designed to expand municipal treatment plant facilities and/or extend municipal service lines, which may also require ESR approvals for additional design service capacity, as well as other associated works.

APPENDIX D

Sanitary Servicing Design Calculations

CROZIER CONSULTING ENGINEERS

File: 1923-5641
Date: May 11, 2021
By: EF
Check By: GC

425 Union Street Development - Sanitary Demand

Developed Site Area	5.34	ha
Number of Residential Units and Land Usage		
1) Single Residential	**48**	**Units**
2) Semi-Detached Residential	**38**	**Units**
Person Per Residential Unit		
1) Single Residential (Per Water & Wastewater Servicing Master Plan, 20	2.4	persons/unit
2) Sem-Detached (Per Water & Wastewater Servicing Master Plan, 201	2.4	persons/unit
Total Residential Population	206	Persons
Unit Sewage flows		
Residential (Per Water & Wastewater Servicing Master Plan, 2015)	300	L/C-day
Infiltration (Per Water & Wastewater Servicing Master Plan, 2015)	0.23	L/s/ha
Total Design Sewage Flows		
Infiltration/Inflow Residential	1.23	L/sec
Average Daily Residential Flow	0.72	L/sec
Residential Peak Factor (Harmon Formula)	4.1	
Total Peak Daily Flow	**4.20**	**L/sec**

APPENDIX E

Stormwater Management Calculations

CROZIER CONSULTING ENGINEERS

Project Name: Union Street - Meaford
Project Number: 1923-5641
Date: 5/19/2021
By: EF

D.A. NAME 101
D.A. AREA (ha) 2.32

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Brighton Sand	Brs	A	100	2.32
				0
				0
				0
Total Area				2.32

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Brs		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal	0		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Brs	0.00		0.00		0.00		0.30	49	2.02	62	2.32	139.92
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal	0.00		0.00		0.00		0.30		2.02			

Composite Area Calculations		
	Total Pervious Area	2.32
	Total Impervious Area	0
	% Impervious	0.00%
	Composite Curve Number	60.3
	Total Area Check	2.32

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Brighton Sand		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0.3016	1.508	0.15	0		0		0		0	0.04524
Cultivated	7	2.0184	14.1288	0.25	2		0		0		0	0.5046
Impervious	2	0	0		0		0		0		0	0
Composite		2.32	6.74	Composite Runoff Coefficient								0.24

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet	100	1	1.00%		0.00							
Channel	107	1.87	1.75%		0				0.17	0.11	0.61	0.41

Appropriate calculated time to peak:	0.41	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name: Union Street - Meaford
Project Number: 1923-5641
Date: 5/19/2021
By: EF

D.A. NAME 102
D.A. AREA (ha) 2.88

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Brighton Sand	Brs	A	100	2.88
				0
				0
				0
Total Area				2.88

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Brs		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal	0		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Brs	0.00		0.00		0.00		0.37	49	2.51	62	2.88	173.69
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal	0.00		0.00		0.00		0.37		2.51			

Composite Area Calculations		
	Total Pervious Area	2.88
	Total Impervious Area	0
	% Impervious	0.00%
	Composite Curve Number	60.3
	Total Area Check	2.88

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Brighton Sand		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0.3744	1.872	0.15	0		0		0		0	0.05616
Cultivated	7	2.5056	17.5392	0.25	3		0		0		0	0.6264
Impervious	2	0	0		0		0		0		0	0
Composite		2.88	6.74	Composite Runoff Coefficient								0.24

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet	100	1.6	1.60%		0.00							
Channel	130	1.3	1.00%		0				0.19	0.13	0.66	0.44

Appropriate calculated time to peak:	0.44	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**201**
Project Number:	1923-5641	**D.A. AREA (ha)**	**3.89**
Date:	5/19/2021		
By:	EF		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	3.89
				0
				0
				0
Total Area Check				3.89

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0.628	98		98	0.396	98	0.857	98		98	1.881	184.34
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0.628		0		0.396		0.857		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		2.01	49	0		2.009	98.441
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		2.009		0			

	Pervious Area Calculations	Total Pervious Area	2.009
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	1.024
		Total Indirectly Connected Area	0.857
		Total Impervious Area	1.881
		% X imp	26.3
		% T imp	48.4
		Total Area Check	3.89

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	2.009	10.045
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	161	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**202**
Project Number:	1923-5641	**D.A. AREA (ha)**	**0.35**
Date:	5/19/2021		
By:	EF		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	0.35
				0
				0
				0
Total Area Check				0.35

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs		98		98	0.0098	98	0.1361	98		98	0.1459	14.298
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0.0098		0.1361		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		0.2041	49	0		0.2041	10.001
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.2041		0			

	Pervious Area Calculations	Total Pervious Area	0.2041
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	0.0098
		Total Indirectly Connected Area	0.1361
		Total Impervious Area	0.1459
		% X imp	2.8
		% T imp	41.7
		Total Area Check	0.35

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.2041	1.0205
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	48	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**203**
Project Number:	1923-5641	**D.A. AREA (ha)**	**0.17**
Date:	5/19/2021		
By:	EF		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	0.17
				0
				0
				0
Total Area Check				0.17

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs		98		98		98	0.068	98		98	0.068	6.664
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0.068		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		0.102	49	0		0.102	4.998
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.102		0			

	Pervious Area Calculations	Total Pervious Area	0.102
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	0
		Total Indirectly Connected Area	0.068
		Total Impervious Area	0.068
		% X imp	0.0
		% T imp	40.0
		Total Area Check	0.17

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.102	0.51
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	34	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**204**
Project Number:	1923-5641	**D.A. AREA (ha)**	**0.12**
Date:	5/19/2021		
By:	EF		

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

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	0.12
				0
				0
				0
Total Area Check				0.12

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs		98		98	0.0045	98	0.0462	98		98	0.0507	4.9686
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0.0045		0.0462		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		0.0693	49	0		0.0693	3.3957
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.0693		0			

	Pervious Area Calculations	Total Pervious Area	0.0693
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	0.0045
		Total Indirectly Connected Area	0.0462
		Total Impervious Area	0.0507
		% X imp	3.8
		% T imp	42.3
		Total Area Check	0.12

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.0693	0.3465
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	28	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**205**
Project Number:	1923-5641	**D.A. AREA (ha)**	**0.12**
Date:	5/19/2021		
By:	EF		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 205

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	0.12
				0
				0
				0
Total Area Check				0.12

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0.0579	98		98		98		98		98	0.0579	5.6742
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0.0579		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		0.0621	49	0		0.0621	3.0429
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.0621		0			

	Pervious Area Calculations	Total Pervious Area	0.0621
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	0.0579
		Total Indirectly Connected Area	0
		Total Impervious Area	0.0579
		% X imp	48.3
		% T imp	48.3
		Total Area Check	0.12

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.0621	0.3105
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	28	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	Union Street - Meaford	**D.A. NAME**	**206**
Project Number:	1923-5641	**D.A. AREA (ha)**	**0.55**
Date:	5/19/2021		
By:	EF		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 206

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Brighton Sand	Brs	A	100	0.55
				0
				0
				0
Total Area Check				0.55

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs		98		98		98	0.205	98		98	0.205	20.09
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0.205		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Brs	0		0		0		0.345	49	0		0.345	16.905
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.345		0			

	Pervious Area Calculations	Total Pervious Area	0.345
		Composite Pervious Curve Number	49
	Impervious Area Calculations	Total Directly Connected Area	0
		Total Indirectly Connected Area	0.205
		Total Impervious Area	0.205
		% X imp	0.0
		% T imp	37.3
		Total Area Check	0.55

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.345	1.725
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.25
Impervious	2.0	2	61	0.013

```
00001> 2     Metric units
00002> *#*************************************************************************
00003> *#  Project Name: [Union Street - Meaford]    Project Number: [1923-5641]
00004> *#  Date        : 2020-05-19
00005> *#  Modeller    : [EF]
00006> *#  Company     : C.F. Crozier & Associates Inc.
00007> *#  License #   :  3737016
00008> *#*************************************************************************
00009> START               TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00010> *%                   [  ] <--storm filename, one per line for NSTORM time
00011> *%------------------|-------------------------------------------------------|
00012> *#------------------|-------------------------------------------------------|
00013> *#------------------|-------------------------------------------------------|
00014> *%------------------|-------------------------------------------------------|
00015> *#*************************************************************************
00016> *#                          100-YEAR, 4 HOUR CHICAGO STORM
00017> *#*************************************************************************
00018> *#------------------|-------------------------------------------------------|
00019> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00020>                     ICASEcs=[2],
00021>                     Enter ordinates of IDF curve below, at least seven points
00022>                         TIME (min)    Intensity(mm/hr)
00023>                           [5]         [265.1]
00024>                           [10]        [163.4]
00025>                           [15]        [123.1]
00026>                           [30]        [75.9]
00027>                           [60]        [46.8]
00028>                           [120]       [28.8]
00029>                           [360]       [13.4]
00030>                           [720]       [8.3]
00031>                           [1440]      [5.1]
00032>                             -1             -1
00033> *#------------------|-------------------------------------------------------|
00034> *#------------------|----------EXISTING-------------------------------------|
00035> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00036>                     DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00037>                     N=[3], TP=[0.41]hrs,
00038>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00039> *#------------------|----------PROPOSED-------------------------------------|
00040> CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00041>                     XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00042>                     SCS curve number CN=[49],
00043>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00044>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00045>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00046>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00047>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00048> *#------------------|----------PROPOSED-------------------------------------|
00049> *#------------------|----------POND-----------------------------------------|
00050> ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
00051>                     RDT=[1](min),
00052>                           TABLE of ( OUTFLOW-STORAGE ) values
00053>                                     (cms) - (ha-m)
00054>                                   [   0.0 , 0.0 ]
00055>                                   [ 0.009 , 0.015]
00056>                                   [ 0.013 , 0.033]
00057>                                   [ 0.017 , 0.059]
00058>                                   [ 0.019 , 0.092]
00059>                                   [ 0.022 , 0.128]
00060>                                   [ 0.098 , 0.166]
00061>                                   [ 0.667 , 0.207]
00062>                                   [ 1.958 , 0.251]
00063>                                   [   -1  , -1    ]   (max twenty pts)
00064>                           IDovf=[3], NHYDovf=["POND OUT"]
00065> *#------------------|-------------------------------------------------------|
00066> *#------------------|-------------------------------------------------------|
00067> CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00068>                     XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00069>                     SCS curve number CN=[49],
00070>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00071>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00072>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00073>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00074>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00075> *#------------------|----------PROPOSED-------------------------------------|
00076> CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00077>                     XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00078>                     SCS curve number CN=[49],
00079>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00080>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00081>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00082>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00083>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00084> *%------------------|-------------------------------------------------------|
00085> ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00086> *#------------------|-------------------------------------------------------|
00087> *#------------------|-------------------------------------------------------|
00088> *#------------------|----------PROPOSED-------------------------------------|
00089> CALIB STANDHYD      ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00090>                     XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00091>                     SCS curve number CN=[49],
00092>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00093>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00094>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00095>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00096>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00097> *#------------------|----------PROPOSED-------------------------------------|
00098> CALIB STANDHYD      ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00099>                     XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00100>                     SCS curve number CN=[49],
00101>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00102>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00103>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00104>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00105>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00106> *#------------------|----------EXISTING-------------------------------------|
00107> CALIB NASHYD        ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00108>                     DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00109>                     N=[3], TP=[0.44]hrs,
00110>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00111> *#------------------|----------PROPOSED-------------------------------------|
00112> CALIB STANDHYD      ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00113>                     XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00114>                     SCS curve number CN=[49],
00115>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00116>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00117>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00118>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00119>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00120> *%------------------|-------------------------------------------------------|
00121> *#*************************************************************************
00122> *#                          50-YEAR, 4 HOUR CHICAGO STORM
00123> *#*************************************************************************
00124> *#------------------|-------------------------------------------------------|
00125> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00126>                     ICASEcs=[2],
00127>                     Enter ordinates of IDF curve below, at least seven points
00128>                         TIME (min)    Intensity(mm/hr)
00129>                           [5]         [241.2]
00130>                           [10]        [148.7]
00131>                           [15]        [112.0]
00132>                           [30]        [69.1]
00133>                           [60]        [42.6]
00134>                           [120]       [26.3]
00135>                           [360]       [12.2]
00136>                           [720]       [7.5]
00137>                           [1440]      [4.6]
00138>                             -1             -1
00139> *#------------------|-------------------------------------------------------|
00140> *#------------------|----------EXISTING-------------------------------------|
00141> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00142>                     DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00143>                     N=[3], TP=[0.41]hrs,
00144>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00145> *#------------------|----------PROPOSED-------------------------------------|
00146> CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00147>                     XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00148>                     SCS curve number CN=[49],
00149>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00150>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00151>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00152>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00153>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00154> *#------------------|-------------------------------------------------------|
00155> *#------------------|----------POND-----------------------------------------|
00156> ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
00157>                     RDT=[1](min),
00158>                           TABLE of ( OUTFLOW-STORAGE ) values
00159>                                     (cms) - (ha-m)
00160>                                   [   0.0 , 0.0 ]
00161>                                   [ 0.009 , 0.015]
00162>                                   [ 0.013 , 0.033]
00163>                                   [ 0.017 , 0.059]
00164>                                   [ 0.019 , 0.092]
00165>                                   [ 0.022 , 0.128]
00166>                                   [ 0.098 , 0.166]
00167>                                   [ 0.667 , 0.207]
00168>                                   [ 1.958 , 0.251]
00169>                                   [   -1  , -1    ]   (max twenty pts)
00170>                           IDovf=[3], NHYDovf=["POND OUT"]
00171> *#------------------|-------------------------------------------------------|
00172> *#------------------|-------------------------------------------------------|
00173> CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00174>                     XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00175>                     SCS curve number CN=[49],
00176>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00177>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00178>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00179>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00180>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00181> *#------------------|-------------------------------------------------------|
00182> CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00183>                     XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00184>                     SCS curve number CN=[49],
00185>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00186>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00187>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00188>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00189>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00190> *%------------------|-------------------------------------------------------|
00191> ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00192> *#------------------|-------------------------------------------------------|
00193> *#------------------|-------------------------------------------------------|
00194> *#------------------|----------PROPOSED-------------------------------------|
00195> CALIB STANDHYD      ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00196>                     XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00197>                     SCS curve number CN=[49],
00198>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00199>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00200>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00201>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00202>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00203> *#------------------|----------PROPOSED-------------------------------------|
00204> CALIB STANDHYD      ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00205>                     XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00206>                     SCS curve number CN=[49],
00207>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00208>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00209>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00210>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00211>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00212> *#------------------|----------EXISTING-------------------------------------|
00213> CALIB NASHYD        ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00214>                     DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00215>                     N=[3], TP=[0.44]hrs,
00216>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00217> *#------------------|----------PROPOSED-------------------------------------|
00218> CALIB STANDHYD      ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00219>                     XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00220>                     SCS curve number CN=[49],
00221>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00222>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00223>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00224>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00225>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00226> *%------------------|-------------------------------------------------------|
00227> *#*************************************************************************
00228> *#                          25-YEAR, 4 HOUR CHICAGO STORM
00229> *#*************************************************************************
00230> *#------------------|-------------------------------------------------------|
00231> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00232>                     ICASEcs=[2],
00233>                     Enter ordinates of IDF curve below, at least seven points
00234>                         TIME (min)    Intensity(mm/hr)
00235>                           [5]         [216.8]
00236>                           [10]        [133.6]
00237>                           [15]        [100.7]
00238>                           [30]        [62.1]
00239>                           [60]        [38.3]
00240>                           [120]       [23.6]
00241>                           [360]       [11.0]
00242>                           [720]       [6.8]
00243>                           [1440]      [4.2]
00244>                             -1             -1
00245> *#------------------|-------------------------------------------------------|
00246> *#------------------|----------EXISTING-------------------------------------|
00247> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00248>                     DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00249>                     N=[3], TP=[0.41]hrs,
00250>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00251> *#------------------|----------PROPOSED-------------------------------------|
00252> CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00253>                     XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00254>                     SCS curve number CN=[49],
00255>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00256>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00257>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00258>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00259>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00260> *#------------------|-------------------------------------------------------|
00261> *#------------------|----------POND-----------------------------------------|
00262> ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
00263>                     RDT=[1](min),
00264>                           TABLE of ( OUTFLOW-STORAGE ) values
00265>                                     (cms) - (ha-m)
00266>                                   [   0.0 , 0.0 ]
00267>                                   [ 0.009 , 0.015]
00268>                                   [ 0.013 , 0.033]
00269>                                   [ 0.017 , 0.059]
00270>                                   [ 0.019 , 0.092]
00271>                                   [ 0.022 , 0.128]
00272>                                   [ 0.098 , 0.166]
00273>                                   [ 0.667 , 0.207]
00274>                                   [ 1.958 , 0.251]
00275>                                   [   -1  , -1    ]   (max twenty pts)
00276>                           IDovf=[3], NHYDovf=["POND OUT"]
00277> *#------------------|-------------------------------------------------------|
00278> *#------------------|-------------------------------------------------------|
00279> CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00280>                     XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00281>                     SCS curve number CN=[49],
00282>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00283>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00284>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00285>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00286>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00287> *#------------------|-------------------------------------------------------|
00288> CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00289>                     XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00290>                     SCS curve number CN=[49],
00291>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00292>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00293>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00294>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00295>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00296> *%------------------|-------------------------------------------------------|
00297> ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00298> *#------------------|-------------------------------------------------------|
00299> *#------------------|-------------------------------------------------------|
00300> *#------------------|----------PROPOSED-------------------------------------|
00301> CALIB STANDHYD      ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00302>                     XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00303>                     SCS curve number CN=[49],
00304>                     Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00305>                                          LGP=[35](m), MNP=[0.25], SCP=[0](min),
00306>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00307>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00308>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
```

```
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.44]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
*#**************************************************************************
*#                          10-YEAR, 4 HOUR CHICAGO STORM
*#**************************************************************************
*#------------------|--------------------------------------------------|
CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                    ICASEcs=[2],
                    Enter ordinates of IDF curve below, at least seven points
                        TIME (min)    Intensity(mm/hr)
                          [5]         [184.4]
                          [10]        [113.7]
                          [15]        [85.7]
                          [30]        [52.8]
                          [60]        [32.6]
                          [120]       [20.1]
                          [360]       [9.3]
                          [720]       [5.8]
                          [1440]      [3.6]
                            -1          -1
*#------------------|--------------------------------------------------|
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.41]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------POND----------|
ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                [   0.0 , 0.0 ]
                                [ 0.009 , 0.015]
                                [ 0.013 , 0.033]
                                [ 0.017 , 0.059]
                                [ 0.019 , 0.092]
                                [ 0.022 , 0.128]
                                [ 0.098 , 0.166]
                                [ 0.667 , 0.207]
                                [ 1.958 , 0.251]
                                [   -1  , -1   ]  (max twenty pts)
                          IDovf=[3], NHYDovf=["POND OUT"]
*#------------------|--------------------------------------------------|
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
*#------------------|--------------------------------------------------|
*#------------------|--------------------------------------------------|
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.44]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
*#**************************************************************************
*#                          5-YEAR, 4 HOUR CHICAGO STORM
*#**************************************************************************
*#------------------|--------------------------------------------------|
CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                    ICASEcs=[2],
                    Enter ordinates of IDF curve below, at least seven points
                        TIME (min)    Intensity(mm/hr)
                          [5]         [158.3]
                          [10]        [97.6]
                          [15]        [73.6]
                          [30]        [45.4]
                          [60]        [28.0]
                          [120]       [17.3]
                          [360]       [8.0]
                          [720]       [5.0]
                          [1440]      [3.1]
                            -1          -1
*#------------------|--------------------------------------------------|
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.41]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------POND----------|
ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                [   0.0 , 0.0 ]
                                [ 0.009 , 0.015]
                                [ 0.013 , 0.033]
                                [ 0.017 , 0.059]
                                [ 0.019 , 0.092]
                                [ 0.022 , 0.128]
                                [ 0.098 , 0.166]
                                [ 0.667 , 0.207]
                                [ 1.958 , 0.251]
                                [   -1  , -1   ]  (max twenty pts)
                          IDovf=[3], NHYDovf=["POND OUT"]
*#------------------|--------------------------------------------------|
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
*#------------------|--------------------------------------------------|
*#------------------|--------------------------------------------------|
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.44]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
*#**************************************************************************
*#                          2 YEAR, 4 HOUR CHICAGO STORM
*#**************************************************************************
*#------------------|--------------------------------------------------|
CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                    ICASEcs=[2],
                    Enter ordinates of IDF curve below, at least seven points
                        TIME (min)    Intensity(mm/hr)
                          [5]         [119.1]
                          [10]        [73.5]
                          [15]        [55.4]
                          [30]        [34.2]
                          [60]        [21.1]
                          [120]       [13.0]
                          [360]       [6.1]
                          [720]       [3.7]
                          [1440]      [2.3]
                            -1          -1
*#------------------|--------------------------------------------------|
*#------------------|----------EXISTING----------|
CALIB NASHYD        ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
                    N=[3], TP=[0.41]hrs,
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr),  END=-1
*#------------------|----------PROPOSED----------|
CALIB STANDHYD      ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|----------POND----------|
ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                [   0.0 , 0.0 ]
                                [ 0.009 , 0.015]
                                [ 0.013 , 0.033]
                                [ 0.017 , 0.059]
                                [ 0.019 , 0.092]
                                [ 0.022 , 0.128]
                                [ 0.098 , 0.166]
                                [ 0.667 , 0.207]
                                [ 1.958 , 0.251]
                                [   -1  , -1   ]  (max twenty pts)
                          IDovf=[3], NHYDovf=["POND OUT"]
*#------------------|--------------------------------------------------|
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*#------------------|--------------------------------------------------|
CALIB STANDHYD      ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[49],
                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  ,  ](mm/hr) ,  END=-1
*%------------------|--------------------------------------------------|
ADD HYD             IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
*#------------------|--------------------------------------------------|
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```
00617> *#-----------------|---------------------------------------------------|
00618> *#-----------------|---------------------PROPOSED----------------------|
00619> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00620>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00621>                    SCS curve number CN=[49],
00622>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00623>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00624>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00625>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00626>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00627> *#-----------------|---------------------PROPOSED----------------------|
00628> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00629>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00630>                    SCS curve number CN=[49],
00631>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00632>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00633>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00634>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00635>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00636> *#-----------------|---------------------EXISTING----------------------|
00637> CALIB NASHYD       ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00638>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00639>                    N=[3], TP=[0.44]hrs,
00640>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00641> *#-----------------|---------------------PROPOSED----------------------|
00642> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00643>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00644>                    SCS curve number CN=[49],
00645>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00646>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00647>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00648>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00649>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00650> *#-----------------|---------------------------------------------------|
00651> *#*************************************************************************
00652> *#*************************************************************************
00653> *#                              25mm Event
00654> *#*************************************************************************
00655> *#*************************************************************************
00656> *%-----------------|---------------------------------------------------|
00657> CHICAGO STORM      IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00658>                    ICASEcs=[1],
00659>                     A=[568.700],  B=[6.662], and C=[0.819],
00660> *%-----------------|---------------------------------------------------|
00661> *#-----------------|---------------------------------------------------|
00662> *#-----------------|---------------------EXISTING----------------------|
00663> CALIB NASHYD       ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00664>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00665>                    N=[3], TP=[0.41]hrs,
00666>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00667> *#-----------------|---------------------PROPOSED----------------------|
00668> CALIB STANDHYD     ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00669>                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00670>                    SCS curve number CN=[49],
00671>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00672>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00673>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00674>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00675>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00676> *#-----------------|---------------------------------------------------|
00677> *#-----------------|---------------------POND----------------------|
00678> ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
00679>                    RDT=[1](min),
00680>                          TABLE of ( OUTFLOW-STORAGE ) values
00681>                                   (cms) - (ha-m)
00682>                                 [   0.0 , 0.0 ]
00683>                                 [ 0.009 , 0.015]
00684>                                 [ 0.013 , 0.033]
00685>                                 [ 0.017 , 0.059]
00686>                                 [ 0.019 , 0.092]
00687>                                 [ 0.022 , 0.128]
00688>                                 [ 0.098 , 0.166]
00689>                                 [ 0.667 , 0.207]
00690>                                 [ 1.958 , 0.251]
00691>                                 [   -1  , -1    ]  (max twenty pts)
00692>                          IDovf=[3], NHYDovf=["POND OUT"]
00693> *#-----------------|---------------------------------------------------|
00694> *#-----------------|---------------------------------------------------|
00695> CALIB STANDHYD     ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00696>                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00697>                    SCS curve number CN=[49],
00698>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00699>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00700>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00701>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00702>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00703> *#-----------------|---------------------PROPOSED----------------------|
00704> CALIB STANDHYD     ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00705>                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00706>                    SCS curve number CN=[49],
00707>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00708>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00709>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00710>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00711>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00712> *%-----------------|---------------------------------------------------|
00713> ADD HYD            IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00714> *#-----------------|---------------------------------------------------|
00715> *#-----------------|---------------------------------------------------|
00716> *#-----------------|---------------------PROPOSED----------------------|
00717> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00718>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00719>                    SCS curve number CN=[49],
00720>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00721>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00722>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00723>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00724>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00725> *#-----------------|---------------------PROPOSED----------------------|
00726> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00727>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00728>                    SCS curve number CN=[49],
00729>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00730>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00731>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00732>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00733>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00734> *#-----------------|---------------------EXISTING----------------------|
00735> CALIB NASHYD       ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00736>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00737>                    N=[3], TP=[0.44]hrs,
00738>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00739> *#-----------------|---------------------PROPOSED----------------------|
00740> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00741>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00742>                    SCS curve number CN=[49],
00743>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00744>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00745>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00746>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00747>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00748> *#*************************************************************************
00749> *#*************************************************************************
00750> *#                            Timmins Storm (Regional)
00751> *#*************************************************************************
00752> *#*************************************************************************
00753> READ STORM          STORM_FILENAME=["tim.stm"]
00754> *#*************************************************************************
00755> *#*************************************************************************
00756> *#-----------------|---------------------------------------------------|
00757> *#-----------------|---------------------EXISTING----------------------|
00758> CALIB NASHYD       ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00759>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00760>                    N=[3], TP=[0.41]hrs,
00761>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00762> *#-----------------|---------------------PROPOSED----------------------|
00763> CALIB STANDHYD     ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00764>                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00765>                    SCS curve number CN=[49],
00766>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00767>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00768>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00769>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00770>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00771> *#-----------------|---------------------------------------------------|
00772> *#-----------------|---------------------POND----------------------|
00773> ROUTE RESERVOIR     IDout=[2],   NHYD=["POND"],  IDin=[1],
00774>                    RDT=[1](min),
00775>                          TABLE of ( OUTFLOW-STORAGE ) values
00776>                                   (cms) - (ha-m)
00777>                                 [   0.0 , 0.0 ]
00778>                                 [ 0.009 , 0.015]
00779>                                 [ 0.013 , 0.033]
00780>                                 [ 0.017 , 0.059]
00781>                                 [ 0.019 , 0.092]
00782>                                 [ 0.022 , 0.128]
00783>                                 [ 0.098 , 0.166]
00784>                                 [ 0.667 , 0.207]
00785>                                 [ 1.958 , 0.251]
00786>                                 [   -1  , -1    ]  (max twenty pts)
00787>                          IDovf=[3], NHYDovf=["POND OUT"]
00788> *#-----------------|---------------------------------------------------|
00789> *#-----------------|---------------------------------------------------|
00790> CALIB STANDHYD     ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00791>                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00792>                    SCS curve number CN=[49],
00793>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00794>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00795>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00796>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00797>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00798> *#-----------------|---------------------------------------------------|
00799> CALIB STANDHYD     ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00800>                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00801>                    SCS curve number CN=[49],
00802>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00803>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00804>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00805>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00806>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00807> *%-----------------|---------------------------------------------------|
00808> ADD HYD            IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00809> *#-----------------|---------------------------------------------------|
00810> *#-----------------|---------------------------------------------------|
00811> *#-----------------|---------------------PROPOSED----------------------|
00812> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00813>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00814>                    SCS curve number CN=[49],
00815>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00816>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00817>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00818>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00819>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00820> *#-----------------|---------------------PROPOSED----------------------|
00821> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00822>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00823>                    SCS curve number CN=[49],
00824>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00825>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00826>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00827>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00828>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00829> *#-----------------|---------------------EXISTING----------------------|
00830> CALIB NASHYD       ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00831>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00832>                    N=[3], TP=[0.44]hrs,
00833>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00834> *#-----------------|---------------------PROPOSED----------------------|
00835> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00836>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00837>                    SCS curve number CN=[49],
00838>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00839>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00840>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00841>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00842>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00843> *#-----------------|---------------------------------------------------|
00844> *#-----------------|---------------------------------------------------|
00845>
00846> FINISH
00847>
```

```
00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H    Y Y    MM MM    O   O           2   0   0  1 1   7   7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O           2   0   0   1    7    Ver4.05.0
00006>     S   W W     M   M   H   H     Y     M   M    O   O       222   0   0   1    7    APR 2017
00007> SSSSS    W W    M   M   H   H     Y     M   M     OOO        2     0   0  1 1   7    ========
00008>                                                              2     0   0   1    7    # 3737016
00009>       StormWater Management HYdrologic Model                 222     000    11   7    ========
00010>
00011> ************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ************************************
00013> ****************  A single event and continuous hydrologic simulation model  ****************
00014> ****************     based on the principles of HYMO and its successors      ****************
00015> ****************                 OTTHYMO-83 and OTTHYMO-89.                  ****************
00016> ************************************************************************************
00017> ****************  Distributed by:  J.F. Sabourin and Associates Inc.          ****************
00018> ****************                  Ottawa,  Ontario: (613) 836-3884           ****************
00019> ****************                  Gatineau, Quebec: (819) 243-6858           ****************
00020> ****************                  E-Mail: swmhymo@jfsa.com                   ****************
00021> ************************************************************************************
00022>
00023> ************************************************************************************
00024> ****************  Licensed user: C.F. Crozier & Associates Inc.          ****************
00025> ****************                 Collingwood          SERIAL#:3737016    ****************
00026> ************************************************************************************
00027>
00028> ************************************************************************************
00029> ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++      ****************
00030> ****************                Maximum value for ID numbers  :    11      ****************
00031> ****************                Max. number of rainfall points: 105408     ****************
00032> ****************                Max. number of flow points    : 105408     ****************
00033> ************************************************************************************
00034>
00035> ************************************************************************************
00036> ************************************  SWMHYMO Ver4.05.0  ************************************
00037> ****************  A single event and continuous hydrologic simulation model  ****************
00038> ****************     based on the principles of HYMO and its successors      ****************
00039> ****************                 OTTHYMO-83 and OTTHYMO-89.                  ****************
00040> ************************************************************************************
00041> ****************  Distributed by:  J.F. Sabourin and Associates Inc.          ****************
00042> ****************                  Ottawa,  Ontario: (613) 836-3884           ****************
00043> ****************                  Gatineau, Quebec: (819) 243-6858           ****************
00044> ****************                  E-Mail: swmhymo@jfsa.com                   ****************
00045> ************************************************************************************
00046>
00047> ************************************************************************************
00048> ****************  Licensed user: C.F. Crozier & Associates Inc.          ****************
00049> ****************                 Collingwood          SERIAL#:3737016    ****************
00050> ************************************************************************************
00051>
00052> ************************************************************************************
00053> ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++      ****************
00054> ****************                Maximum value for ID numbers  :    11      ****************
00055> ****************                Max. number of rainfall points: 105408     ****************
00056> ****************                Max. number of flow points    : 105408     ****************
00057> ************************************************************************************
00058>
00059>
00060> ******************************  D E T A I L E D   O U T P U T  ******************************
00061> ************************************************************************************
00062> *                  RUN DATE: 2021-05-26      TIME: 08:32:15     RUN COUNTER: 000004           *
00063> ************************************************************************************
00064> * Input   file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMHYMO\2020.05.20 MO*
00065> *               DEL.dat                                                                *
00066> * Output  file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMHYMO\2020.05.20 MO*
00067> *               DEL.out                                                                *
00068> * Summary file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMHYMO\2020.05.20 MO*
00069> *               DEL.sum                                                                *
00070> * User comments:                                                                       *
00071> * 1:_____________________________________________________________________________________*
00072> * 2:_____________________________________________________________________________________*
00073> * 3:_____________________________________________________________________________________*
00074> ************************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001-------------------------------------------------------------------------
00078> *#*********************************************************************
00079> *#  Project Name: [Union Street - Meaford]    Project Number: [1923-5641]
00080> *#  Date        : 2020-05-19
00081> *#  Modeller    : [EF]
00082> *#  Company     : C.F. Crozier & Associates Inc.
00083> *#  License #   :  3737016
00084> *#*********************************************************************
00085> --------------------
00086> | START            | Project  dir.:C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMH
00087> ------------------- Rainfall dir.:C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMH
00088>     TZERO =    .00 hrs on      0
00089>     METOUT=   2 (output = METRIC)
00090>     NRUN  = 0001
00091>     NSTORM=   0
00092> --------------------------------------------------------------------------------
00093> R0001:C00002-------|-----------------------------------------------------------------
00094> *#*****************|*****************************************************************
00095> *#-----------------|-----------------------------------------------------------------|
00096> *#*****************|*****************************************************************
00097> *#                          100-YEAR, 4 HOUR CHICAGO STORM
00098> *#*****************|*****************************************************************
00099> *#-----------------|-----------------------------------------------------------------|
00100> --------------------
00101> | CHICAGO STORM    |    IDF curve parameters: A= 955.472
00102> | Ptotal= 71.95 mm |                          B=   1.500
00103> --------------------                          C=    .724
00104>                          used in:   INTENSITY =  A / (t + B)^C
00105>
00106>                          Duration of storm  =  4.00 hrs
00107>                          Storm time step    =  5.00 min
00108>                          Time to peak ratio =   .33
00109>
00110>                     The CORRELATION coefficient is = .9996642
00111>
00112>                      TIME        ENTERED             COMPUTED
00113>                     (min)        (mm/hr)              (mm/hr)
00114>                       5.          265.10               246.42
00115>                      10.          163.40               163.03
00116>                      15.          123.10               125.53
00117>                      30.           75.90                78.60
00118>                      60.           46.80                48.43
00119>                     120.           28.80                29.58
00120>                     360.           13.40                13.43
00121>                     720.            8.30                 8.14
00122>                    1440.            5.10                 4.93
00123>
00124>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00125>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00126>         0:05   5.332|   0:45   9.487|   1:25  71.385|   2:05  12.831|   2:45   8.002|   3:25   6.025
00127>         0:10   5.614|   0:50  10.690|   1:30  40.737|   2:10  11.860|   2:50   7.672|   3:30   5.854
00128>         0:15   5.933|   0:55  12.333|   1:35  29.627|   2:15  11.047|   2:55   7.372|   3:35   5.695
00129>         0:20   6.300|   1:00  14.740|   1:40  23.718|   2:20  10.355|   3:00   7.099|   3:40   5.545
00130>         0:25   6.726|   1:05  18.682|   1:45  19.995|   2:25   9.758|   3:05   6.849|   3:45   5.404
00131>         0:30   7.228|   1:10  26.647|   1:50  17.409|   2:30   9.237|   3:10   6.618|   3:50   5.272
00132>         0:35   7.828|   1:15  56.027|   1:55  15.495|   2:35   8.777|   3:15   6.406|   3:55   5.147
00133>         0:40   8.563|   1:20 246.416|   2:00  14.015|   2:40   8.368|   3:20   6.209|   4:00   5.028
00134>
00135> --------------------------------------------------------------------------------
00136> R0001:C00003-------------------------------------------------------------------------
00137> *#*****************|*****************************************************************
00138> *#-----------------|-----------------------EXISTING--------------------------------|
00139> --------------------------
00140> | CALIB NASHYD     |   Area    (ha)=    2.390   Curve Number   (CN)= 60.30
00141> | 01:101      DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
00142> --------------------------  U.H. Tp(hrs)=     .410
00143>
00144>      Unit Hyd Qpeak  (cms)=     .223
00145>
00146>      PEAK FLOW       (cms)=     .078 (i)
00147>      TIME TO PEAK    (hrs)=    1.867
00148>      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
00149>      AVERAGE FLOW    (cms)=     .018
00150>      RUNOFF VOLUME    (mm)=   18.312
00151>      TOTAL RAINFALL   (mm)=   71.946
00152>      RUNOFF COEFFICIENT   =     .255
00153>
00154>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00155>
00156> --------------------------------------------------------------------------------
00157> R0001:C00004-------------------------------------------------------------------------
00158> *#*****************|*****************PROPOSED********************************|
00159> --------------------------
00160> | CALIB STANDHYD    |   Area    (ha)=    3.89
00161> | 01:201      DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
00162> --------------------------
00163>                          IMPERVIOUS    PERVIOUS (i)
00164>      Surface Area    (ha)=       1.88         2.01
00165>      Dep. Storage    (mm)=       2.00         5.00
00166>      Average Slope    (%)=       2.00         2.00
00167>      Length           (m)=     100.00        35.00
00168>      Mannings n            =      .013         .250
00169>
00170>      Max.eff.Inten.(mm/hr)=     246.42        52.75
00171>                 over (min)       1.00        10.00
00172>      Storage Coeff.  (min)=      1.45 (ii)    9.86 (ii)
00173>      Unit Hyd. Tpeak (min)=      1.00        10.00
00174>      Unit Hyd. peak  (cms)=       .85          .11
00175>                                                          *TOTALS*
00176>      PEAK FLOW       (cms)=       .68          .18          .740 (iii)
00177>      TIME TO PEAK    (hrs)=      1.33         1.48         1.333
00178>      RUNOFF VOLUME    (mm)=     69.95        18.48        32.014
00179>      TOTAL RAINFALL   (mm)=     71.95        71.95        71.946
00180>      RUNOFF COEFFICIENT   =       .97          .26          .445
00181>
00182>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00183>            CN* =  49.0    Ia = Dep. Storage    (Above)
00184>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00185>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00186>
00187> --------------------------------------------------------------------------------
00188> R0001:C00005-------------------------------------------------------------------------
00189> *#*****************|-----------------------------------------------------------|
00190> *#-----------------|-----------------------POND--------------------------------|
00191> --------------------------
00192> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00193> |  IN>01:201          |
00194> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
00195> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00196>                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
00197>                        .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
00198>                        .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
00199>                        .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
00200>
00201>      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
00202>      -----------------------     (ha)     (cms)     (hrs)      (mm)
00203>        INFLOW > 01:201          3.890      .740     1.333     32.014
00204>       OUTFLOW < 02:POND         3.890      .020     4.050     32.014
00205>    OVERFLOW < 03:POND OUT        .000      .000      .000      .000
00206>
00207>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00208>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00209>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00210>
00211>
00212>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.700
00213>                     TIME SHIFT OF PEAK FLOW          (min)=   163.00
00214>                     MAXIMUM  STORAGE   USED        (ha.m.)=.1037E+00
00215>
00216> --------------------------------------------------------------------------------
00217> R0001:C00006-------------------------------------------------------------------------
00218> *#*****************|-----------------------------------------------------------|
00219> *#-----------------|-----------------------------------------------------------|
00220> --------------------------
00221> | CALIB STANDHYD    |   Area    (ha)=     .35
00222> | 04:202      DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
00223> --------------------------
00224>                          IMPERVIOUS    PERVIOUS (i)
00225>      Surface Area    (ha)=        .15          .20
00226>      Dep. Storage    (mm)=       2.00         5.00
00227>      Average Slope    (%)=       2.00         2.00
00228>      Length           (m)=     100.00        35.00
00229>      Mannings n            =      .013         .250
00230>
00231>      Max.eff.Inten.(mm/hr)=     246.42        73.76
00232>                 over (min)       1.00         9.00
00233>      Storage Coeff.  (min)=      1.45 (ii)    8.80 (ii)
00234>      Unit Hyd. Tpeak (min)=      1.00         9.00
00235>      Unit Hyd. peak  (cms)=       .85          .13
00236>                                                          *TOTALS*
00237>      PEAK FLOW       (cms)=       .01          .03          .027 (iii)
00238>      TIME TO PEAK    (hrs)=      1.33         1.47         1.467
00239>      RUNOFF VOLUME    (mm)=     69.88        20.89        22.266
00240>      TOTAL RAINFALL   (mm)=     71.95        71.95        71.946
00241>      RUNOFF COEFFICIENT   =       .97          .29          .309
00242>
00243>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00244>            CN* =  49.0    Ia = Dep. Storage    (Above)
00245>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00246>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00247>
00248> --------------------------------------------------------------------------------
00249> R0001:C00007-------------------------------------------------------------------------
00250> *#*****************|-----------------------------------------------------------|
00251> --------------------------
00252> | CALIB STANDHYD    |   Area    (ha)=     .17
00253> | 05:203      DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
00254> --------------------------
00255>                          IMPERVIOUS    PERVIOUS (i)
00256>      Surface Area    (ha)=        .07          .10
00257>      Dep. Storage    (mm)=       2.00         5.00
00258>      Average Slope    (%)=       2.00         2.00
00259>      Length           (m)=     100.00        35.00
00260>      Mannings n            =      .013         .250
00261>
00262>      Max.eff.Inten.(mm/hr)=     246.42        73.58
00263>                 over (min)       1.00         9.00
00264>      Storage Coeff.  (min)=      1.45 (ii)    8.81 (ii)
00265>      Unit Hyd. Tpeak (min)=      1.00         9.00
00266>      Unit Hyd. peak  (cms)=       .90          .13
00267>                                                          *TOTALS*
00268>      PEAK FLOW       (cms)=       .00          .01          .013 (iii)
00269>      TIME TO PEAK    (hrs)=      1.32         1.47         1.467
00270>      RUNOFF VOLUME    (mm)=     69.95        20.87        20.922
00271>      TOTAL RAINFALL   (mm)=     71.95        71.95        71.946
00272>      RUNOFF COEFFICIENT   =       .97          .29          .291
00273>
00274>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00275>            CN* =  49.0    Ia = Dep. Storage    (Above)
00276>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00277>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00278>
00279> --------------------------------------------------------------------------------
00280> R0001:C00008-------------------------------------------------------------------------
00281> --------------------------
00282> | ADD HYD          |
00283> | 06:CULVERT       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00284> --------------------------                (ha)     (cms)    (hrs)      (mm)     (cms)
00285>                        ID 1 02:POND          3.890      .020     4.050     32.014     .000
00286>                       +ID 2 03:POND OUT      .000      .000      .000      .000     .000  **DRY**
00287>                       +ID 3 04:202           .350      .027     1.467     22.266     .000
00288>                       +ID 4 05:203           .170      .013     1.467     20.922     .000
00289>                        ================================================================
00290>                        SUM   06:CULVERT      4.410      .055     1.467     30.812     .000
00291>
00292>   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00293>
00294> --------------------------------------------------------------------------------
00295> R0001:C00009-------------------------------------------------------------------------
00296> *#*****************|-----------------------------------------------------------|
00297> *#-----------------|-----------------------------------------------------------|
00298> *#*****************|*****************PROPOSED********************************|
00299> --------------------------
00300> | CALIB STANDHYD    |   Area    (ha)=     .12
00301> | 09:204      DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
00302> --------------------------
00303>                          IMPERVIOUS    PERVIOUS (i)
00304>      Surface Area    (ha)=        .05          .07
00305>      Dep. Storage    (mm)=       2.00         5.00
00306>      Average Slope    (%)=       2.00         2.00
00307>      Length           (m)=     100.00        35.00
00308>      Mannings n            =      .013         .250
```

```
00309>
00310>      Max.eff.Inten.(mm/hr)=     246.42        73.76
00311>                 over (min)        1.00         9.00
00312>      Storage Coeff.  (min)=       1.45 (ii)    8.80 (ii)
00313>      Unit Hyd. Tpeak (min)=       1.00         9.00
00314>      Unit Hyd. peak  (cms)=        .85          .13
00315>                                                      *TOTALS*
00316>      PEAK FLOW       (cms)=        .00          .01          .009 (iii)
00317>      TIME TO PEAK    (hrs)=       1.33         1.47         1.467
00318>      RUNOFF VOLUME    (mm)=      69.81        20.89        22.753
00319>      TOTAL RAINFALL   (mm)=      71.95        71.95        71.946
00320>      RUNOFF COEFFICIENT   =        .97          .29          .316
00321>
00322>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00323>            CN* =  49.0    Ia = Dep. Storage  (Above)
00324>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00325>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00326>
00327> ------------------------------------------------------------------------------------------------------------
00328> R0001:C00010-----------------------------------------------------------------------------------------------
00329> *#-----------------|--------------------PROPOSED----------------------------|
00330> -------------------------
00331> | CALIB STANDHYD       |   Area    (ha)=     .12
00332> | 10:205       DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
00333> -------------------------
00334>                            IMPERVIOUS    PERVIOUS (i)
00335>      Surface Area     (ha)=        .06          .06
00336>      Dep. Storage     (mm)=       2.00         5.00
00337>      Average Slope     (%)=       2.00         2.00
00338>      Length            (m)=     100.00        35.00
00339>      Mannings n            =       .013         .250
00340>
00341>      Max.eff.Inten.(mm/hr)=     246.42        22.33
00342>                 over (min)        1.00        13.00
00343>      Storage Coeff.  (min)=       1.45 (ii)   13.31 (ii)
00344>      Unit Hyd. Tpeak (min)=       1.00        13.00
00345>      Unit Hyd. peak  (cms)=        .85          .09
00346>                                                      *TOTALS*
00347>      PEAK FLOW       (cms)=        .04          .00          .039 (iii)
00348>      TIME TO PEAK    (hrs)=       1.33         1.53         1.333
00349>      RUNOFF VOLUME    (mm)=      69.93        13.53        40.769
00350>      TOTAL RAINFALL   (mm)=      71.95        71.95        71.946
00351>      RUNOFF COEFFICIENT   =        .97          .19          .567
00352>
00353>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00354>            CN* =  49.0    Ia = Dep. Storage  (Above)
00355>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00356>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00357>
00358> ------------------------------------------------------------------------------------------------------------
00359> R0001:C00011-----------------------------------------------------------------------------------------------
00360> *#-----------------|--------------------EXISTING----------------------------|
00361> -------------------------
00362> | CALIB NASHYD         |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
00363> | 07:102       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
00364> -------------------------   U.H. Tp(hrs)=     .440
00365>
00366>      Unit Hyd Qpeak  (cms)=     .257
00367>
00368>      PEAK FLOW       (cms)=     .092 (i)
00369>      TIME TO PEAK    (hrs)=    1.917
00370>      DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
00371>      AVERAGE FLOW    (cms)=     .022
00372>      RUNOFF VOLUME    (mm)=   18.312
00373>      TOTAL RAINFALL   (mm)=   71.946
00374>      RUNOFF COEFFICIENT   =     .255
00375>
00376>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00377>
00378> ------------------------------------------------------------------------------------------------------------
00379> R0001:C00012-----------------------------------------------------------------------------------------------
00380> *#-----------------|--------------------PROPOSED----------------------------|
00381> -------------------------
00382> | CALIB STANDHYD       |   Area    (ha)=     .55
00383> | 08:206       DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
00384> -------------------------
00385>                            IMPERVIOUS    PERVIOUS (i)
00386>      Surface Area     (ha)=        .21          .34
00387>      Dep. Storage     (mm)=       2.00         5.00
00388>      Average Slope     (%)=       2.00         2.00
00389>      Length            (m)=     100.00        35.00
00390>      Mannings n            =       .013         .250
00391>
00392>      Max.eff.Inten.(mm/hr)=     246.42        67.73
00393>                 over (min)        1.00         9.00
00394>      Storage Coeff.  (min)=       1.45 (ii)    9.06 (ii)
00395>      Unit Hyd. Tpeak (min)=       1.00         9.00
00396>      Unit Hyd. peak  (cms)=        .86          .13
00397>                                                      *TOTALS*
00398>      PEAK FLOW       (cms)=        .00          .04          .040 (iii)
00399>      TIME TO PEAK    (hrs)=       1.33         1.47         1.467
00400>      RUNOFF VOLUME    (mm)=      69.95        20.17        20.220
00401>      TOTAL RAINFALL   (mm)=      71.95        71.95        71.946
00402>      RUNOFF COEFFICIENT   =        .97          .28          .281
00403>
00404>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00405>            CN* =  49.0    Ia = Dep. Storage  (Above)
00406>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00407>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00408>
00409> ------------------------------------------------------------------------------------------------------------
00410> R0001:C00013-----------------------------------------------------------------------------------------------
00411> *#**************************************************************************
00412> *#                          50-YEAR, 4 HOUR CHICAGO STORM
00413> *#**************************************************************************
00414> *#-----------------|--------------------------------------------------------|
00415> -------------------
00416> | CHICAGO STORM    |    IDF curve parameters: A= 873.446
00417> | Ptotal= 65.41 mm |                          B=   1.500
00418> -------------------                          C=    .725
00419>                         used in:   INTENSITY =  A / (t + B)^C
00420>
00421>                         Duration of storm  =  4.00 hrs
00422>                         Storm time step    =  5.00 min
00423>                         Time to peak ratio =   .33
00424>
00425>                    The CORRELATION coefficient is = .9997001
00426>
00427>                     TIME        ENTERED             COMPUTED
00428>                     (min)        (mm/hr)             (mm/hr)
00429>                       5.         241.20               224.84
00430>                      10.         148.70               148.67
00431>                      15.         112.00               114.44
00432>                      30.          69.10                71.61
00433>                      60.          42.60                44.09
00434>                     120.          26.30                26.91
00435>                     360.          12.20                12.21
00436>                     720.           7.50                 7.40
00437>                    1440.           4.60                 4.48
00438>
00439>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00440>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00441>       0:05   4.831|   0:45   8.603|   1:25  64.970|   2:05  11.641|   2:45   7.254|   3:25   5.460
00442>       0:10   5.086|   0:50   9.695|   1:30  37.033|   2:10  10.758|   2:50   6.954|   3:30   5.305
00443>       0:15   5.377|   0:55  11.188|   1:35  26.917|   2:15  10.020|   2:55   6.682|   3:35   5.160
00444>       0:20   5.709|   1:00  13.375|   1:40  21.540|   2:20   9.391|   3:00   6.434|   3:40   5.024
00445>       0:25   6.096|   1:05  16.960|   1:45  18.153|   2:25   8.849|   3:05   6.207|   3:45   4.896
00446>       0:30   6.551|   1:10  24.205|   1:50  15.801|   2:30   8.375|   3:10   5.998|   3:50   4.776
00447>       0:35   7.096|   1:15  50.971|   1:55  14.062|   2:35   7.958|   3:15   5.805|   3:55   4.663
00448>       0:40   7.764|   1:20 224.840|   2:00  12.717|   2:40   7.587|   3:20   5.626|   4:00   4.555
00449>
00450> ------------------------------------------------------------------------------------------------------------
00451> R0001:C00014-----------------------------------------------------------------------------------------------
00452> *#-----------------|--------------------------------------------------------|
00453> *#-----------------|--------------------EXISTING----------------------------|
00454> -------------------------
00455> | CALIB NASHYD         |   Area    (ha)=    2.390   Curve Number   (CN)= 60.30
00456> | 01:101       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
00457> -------------------------   U.H. Tp(hrs)=     .410
00458>
00459>      Unit Hyd Qpeak  (cms)=     .223
00460>
00461>      PEAK FLOW       (cms)=     .064 (i)
00462>      TIME TO PEAK    (hrs)=    1.883
00463>      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
00464>      AVERAGE FLOW    (cms)=     .015
00465>      RUNOFF VOLUME    (mm)=   15.256
00466>      TOTAL RAINFALL   (mm)=   65.410
00467>      RUNOFF COEFFICIENT   =     .233
00468>
00469>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00470>
00471> ------------------------------------------------------------------------------------------------------------
00472> R0001:C00015-----------------------------------------------------------------------------------------------
00473> *#-----------------|--------------------PROPOSED----------------------------|
00474> -------------------------
00475> | CALIB STANDHYD       |   Area    (ha)=    3.89
00476> | 01:201       DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
00477> -------------------------
00478>                            IMPERVIOUS    PERVIOUS (i)
00479>      Surface Area     (ha)=       1.88         2.01
00480>      Dep. Storage     (mm)=       2.00         5.00
00481>      Average Slope     (%)=       2.00         2.00
00482>      Length            (m)=     100.00        35.00
00483>      Mannings n            =       .013         .250
00484>
00485>      Max.eff.Inten.(mm/hr)=     224.84        41.48
00486>                 over (min)        2.00        11.00
00487>      Storage Coeff.  (min)=       1.50 (ii)   10.76 (ii)
00488>      Unit Hyd. Tpeak (min)=       2.00        11.00
00489>      Unit Hyd. peak  (cms)=        .66          .10
00490>                                                      *TOTALS*
00491>      PEAK FLOW       (cms)=        .61          .14          .651 (iii)
00492>      TIME TO PEAK    (hrs)=       1.33         1.50         1.333
00493>      RUNOFF VOLUME    (mm)=      63.41        15.52        28.113
00494>      TOTAL RAINFALL   (mm)=      65.41        65.41        65.410
00495>      RUNOFF COEFFICIENT   =        .97          .24          .430
00496>
00497>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00498>            CN* =  49.0    Ia = Dep. Storage  (Above)
00499>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00500>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00501>
00502> ------------------------------------------------------------------------------------------------------------
00503> R0001:C00016-----------------------------------------------------------------------------------------------
00504> *#-----------------|--------------------------------------------------------|
00505> *#-----------------|--------------------POND--------------------------------|
00506> -------------------
00507> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00508> |  IN>01:201          |
00509> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
00510> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00511>                        (cms)    (ha.m.)|  (cms)    (ha.m.)|  (cms)    (ha.m.)|  (cms)    (ha.m.)
00512>                        .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
00513>                        .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
00514>                        .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
00515>
00516>      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
00517>      -----------------------     (ha)     (cms)     (hrs)      (mm)
00518>      INFLOW > 01:201           3.890      .651     1.333    28.113
00519>     OUTFLOW < 02:POND          3.890      .019     4.050    28.113
00520>    OVERFLOW < 03:POND OUT       .000      .000      .000      .000
00521>
00522>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00523>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00524>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00525>
00526>
00527>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.897
00528>                     TIME SHIFT OF PEAK FLOW          (min)=   163.00
00529>                     MAXIMUM  STORAGE   USED        (ha.m.)=.8963E-01
00530>
00531> ------------------------------------------------------------------------------------------------------------
00532> R0001:C00017-----------------------------------------------------------------------------------------------
00533> *#-----------------|--------------------------------------------------------|
00534> *#-----------------|--------------------------------------------------------|
00535> -------------------------
00536> | CALIB STANDHYD       |   Area    (ha)=     .35
00537> | 04:202       DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
00538> -------------------------
00539>                            IMPERVIOUS    PERVIOUS (i)
00540>      Surface Area     (ha)=        .15          .20
00541>      Dep. Storage     (mm)=       2.00         5.00
00542>      Average Slope     (%)=       2.00         2.00
00543>      Length            (m)=     100.00        35.00
00544>      Mannings n            =       .013         .250
00545>
00546>      Max.eff.Inten.(mm/hr)=     224.84        61.84
00547>                 over (min)        2.00         9.00
00548>      Storage Coeff.  (min)=       1.50 (ii)    9.40 (ii)
00549>      Unit Hyd. Tpeak (min)=       2.00         9.00
00550>      Unit Hyd. peak  (cms)=        .67          .12
00551>                                                      *TOTALS*
00552>      PEAK FLOW       (cms)=        .01          .02          .022 (iii)
00553>      TIME TO PEAK    (hrs)=       1.33         1.47         1.467
00554>      RUNOFF VOLUME    (mm)=      63.41        17.63        18.909
00555>      TOTAL RAINFALL   (mm)=      65.41        65.41        65.410
00556>      RUNOFF COEFFICIENT   =        .97          .27          .289
00557>
00558>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00559>            CN* =  49.0    Ia = Dep. Storage  (Above)
00560>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00561>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00562>
00563> ------------------------------------------------------------------------------------------------------------
00564> R0001:C00018-----------------------------------------------------------------------------------------------
00565> *#-----------------|--------------------------------------------------------|
00566> -------------------------
00567> | CALIB STANDHYD       |   Area    (ha)=     .17
00568> | 05:203       DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
00569> -------------------------
00570>                            IMPERVIOUS    PERVIOUS (i)
00571>      Surface Area     (ha)=        .07          .10
00572>      Dep. Storage     (mm)=       2.00         5.00
00573>      Average Slope     (%)=       2.00         2.00
00574>      Length            (m)=     100.00        35.00
00575>      Mannings n            =       .013         .250
00576>
00577>      Max.eff.Inten.(mm/hr)=     224.84        61.68
00578>                 over (min)        2.00         9.00
00579>      Storage Coeff.  (min)=       1.50 (ii)    9.40 (ii)
00580>      Unit Hyd. Tpeak (min)=       2.00         9.00
00581>      Unit Hyd. peak  (cms)=        .70          .12
00582>                                                      *TOTALS*
00583>      PEAK FLOW       (cms)=        .00          .01          .011 (iii)
00584>      TIME TO PEAK    (hrs)=       1.33         1.47         1.467
00585>      RUNOFF VOLUME    (mm)=      63.41        17.61        17.654
00586>      TOTAL RAINFALL   (mm)=      65.41        65.41        65.410
00587>      RUNOFF COEFFICIENT   =        .97          .27          .270
00588>
00589>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00590>            CN* =  49.0    Ia = Dep. Storage  (Above)
00591>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00592>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00593>
00594> ------------------------------------------------------------------------------------------------------------
00595> R0001:C00019-----------------------------------------------------------------------------------------------
00596> -------------------------
00597> | ADD HYD              |
00598> | 06:CULVERT           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00599> ------------------------   (ha)     (cms)    (hrs)      (mm)    (cms)
00600>                          ID 1 02:POND          3.890      .019     4.050    28.113    .000
00601>                         +ID 2 03:POND OUT      .000      .000      .000      .000    .000  **DRY**
00602>                         +ID 3 04:202           .350      .022     1.467    18.909    .000
00603>                         +ID 4 05:203           .170      .011     1.467    17.654    .000
00604>                         ========================================================================
00605>                         SUM   06:CULVERT       4.410      .047     1.467    26.979    .000
00606>
00607>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00608>
00609> ------------------------------------------------------------------------------------------------------------
00610> R0001:C00020-----------------------------------------------------------------------------------------------
00611> *#-----------------|--------------------------------------------------------|
00612> *#-----------------|--------------------------------------------------------|
00613> *#-----------------|--------------------PROPOSED----------------------------|
00614> -------------------------
00615> | CALIB STANDHYD       |   Area    (ha)=     .12
00616> | 09:204       DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
```

```
00617> --------------------------
00618>                              IMPERVIOUS    PERVIOUS (i)
00619>      Surface Area     (ha)=       .05          .07
00620>      Dep. Storage     (mm)=      2.00         5.00
00621>      Average Slope     (%)=      2.00         2.00
00622>      Length            (m)=    100.00        35.00
00623>      Mannings n            =      .013         .250
00624>
00625>      Max.eff.Inten.(mm/hr)=    224.84        61.84
00626>                 over (min)=      2.00         9.00
00627>      Storage Coeff.  (min)=      1.50 (ii)    9.40 (ii)
00628>      Unit Hyd. Tpeak (min)=      2.00         9.00
00629>      Unit Hyd. peak  (cms)=       .67          .12
00630>                                                      *TOTALS*
00631>      PEAK FLOW       (cms)=       .00          .01          .008 (iii)
00632>      TIME TO PEAK    (hrs)=      1.33         1.47         1.467
00633>      RUNOFF VOLUME    (mm)=     63.41        17.63        19.367
00634>      TOTAL RAINFALL   (mm)=     65.41        65.41        65.410
00635>      RUNOFF COEFFICIENT   =       .97          .27          .296
00636>
00637>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00638>            CN* =  49.0     Ia = Dep. Storage  (Above)
00639>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00640>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00641>
00642> ------------------------------------------------------------------------------------------------------------
00643> R0001:C00021------------------------------------------------------------------------------------------------
00644> *#-----------------|---------------------PROPOSED-----------------------------|
00645> --------------------------
00646> | CALIB STANDHYD       |   Area    (ha)=     .12
00647> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
00648> ----------------------
00649>                              IMPERVIOUS    PERVIOUS (i)
00650>      Surface Area     (ha)=       .06          .06
00651>      Dep. Storage     (mm)=      2.00         5.00
00652>      Average Slope     (%)=      2.00         2.00
00653>      Length            (m)=    100.00        35.00
00654>      Mannings n            =      .013         .250
00655>
00656>      Max.eff.Inten.(mm/hr)=    224.84        17.12
00657>                 over (min)=      2.00        15.00
00658>      Storage Coeff.  (min)=      1.50 (ii)   14.70 (ii)
00659>      Unit Hyd. Tpeak (min)=      2.00        15.00
00660>      Unit Hyd. peak  (cms)=       .66          .08
00661>                                                      *TOTALS*
00662>      PEAK FLOW       (cms)=       .03          .00          .035 (iii)
00663>      TIME TO PEAK    (hrs)=      1.33         1.57         1.333
00664>      RUNOFF VOLUME    (mm)=     63.41        11.24        36.436
00665>      TOTAL RAINFALL   (mm)=     65.41        65.41        65.410
00666>      RUNOFF COEFFICIENT   =       .97          .17          .557
00667>
00668>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00669>            CN* =  49.0     Ia = Dep. Storage  (Above)
00670>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00671>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00672>
00673> ------------------------------------------------------------------------------------------------------------
00674> R0001:C00022------------------------------------------------------------------------------------------------
00675> *#-----------------|---------------------EXISTING-----------------------------|
00676> --------------------------
00677> | CALIB NASHYD         |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
00678> | 07:102        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
00679> ----------------------   U.H. Tp(hrs)=     .440
00680>
00681>      Unit Hyd Qpeak  (cms)=     .257
00682>
00683>      PEAK FLOW       (cms)=     .076 (i)
00684>      TIME TO PEAK    (hrs)=    1.917
00685>      DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
00686>      AVERAGE FLOW    (cms)=     .018
00687>      RUNOFF VOLUME    (mm)=   15.256
00688>      TOTAL RAINFALL   (mm)=   65.410
00689>      RUNOFF COEFFICIENT   =     .233
00690>
00691>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00692>
00693> ------------------------------------------------------------------------------------------------------------
00694> R0001:C00023------------------------------------------------------------------------------------------------
00695> *#-----------------|---------------------PROPOSED-----------------------------|
00696> --------------------------
00697> | CALIB STANDHYD       |   Area    (ha)=     .55
00698> | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
00699> ----------------------
00700>                              IMPERVIOUS    PERVIOUS (i)
00701>      Surface Area     (ha)=       .21          .34
00702>      Dep. Storage     (mm)=      2.00         5.00
00703>      Average Slope     (%)=      2.00         2.00
00704>      Length            (m)=    100.00        35.00
00705>      Mannings n            =      .013         .250
00706>
00707>      Max.eff.Inten.(mm/hr)=    224.84        54.38
00708>                 over (min)=      2.00        10.00
00709>      Storage Coeff.  (min)=      1.50 (ii)    9.81 (ii)
00710>      Unit Hyd. Tpeak (min)=      2.00        10.00
00711>      Unit Hyd. peak  (cms)=       .68          .11
00712>                                                      *TOTALS*
00713>      PEAK FLOW       (cms)=       .00          .03          .032 (iii)
00714>      TIME TO PEAK    (hrs)=      1.33         1.48         1.483
00715>      RUNOFF VOLUME    (mm)=     63.41        16.99        17.040
00716>      TOTAL RAINFALL   (mm)=     65.41        65.41        65.410
00717>      RUNOFF COEFFICIENT   =       .97          .26          .261
00718>
00719>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00720>            CN* =  49.0     Ia = Dep. Storage  (Above)
00721>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00722>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00723>
00724> ------------------------------------------------------------------------------------------------------------
00725> R0001:C00024------------------------------------------------------------------------------------------------
00726> *#**************************************************************************
00727> *#                          25-YEAR, 4 HOUR CHICAGO STORM
00728> *#**************************************************************************
00729> *#-----------------|--------------------------------------------------------|
00730> --------------------
00731> | CHICAGO STORM    |    IDF curve parameters: A= 779.210
00732> | Ptotal= 59.00 mm |                          B=   1.500
00733> --------------------                          C=    .723
00734>                          used in:   INTENSITY =  A / (t + B)^C
00735>
00736>                          Duration of storm  =  4.00 hrs
00737>                          Storm time step    =  5.00 min
00738>                          Time to peak ratio =   .33
00739>
00740>                     The CORRELATION coefficient is = .9996538
00741>
00742>                      TIME        ENTERED             COMPUTED
00743>                     (min)        (mm/hr)             (mm/hr)
00744>                       5.          216.80              201.33
00745>                      10.          133.60              133.28
00746>                      15.          100.70              102.66
00747>                      30.           62.10               64.32
00748>                      60.           38.30               39.65
00749>                     120.           23.60               24.24
00750>                     360.           11.00               11.02
00751>                     720.            6.80                6.69
00752>                    1440.            4.20                4.05
00753>
00754>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00755>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00756>       0:05   4.388|   0:45   7.800|   1:25  58.473|   2:05  10.544|   2:45   6.580|   3:25   4.957
00757>       0:10   4.619|   0:50   8.787|   1:30  33.407|   2:10   9.747|   2:50   6.309|   3:30   4.817
00758>       0:15   4.882|   0:55  10.135|   1:35  24.311|   2:15   9.080|   2:55   6.063|   3:35   4.685
00759>       0:20   5.183|   1:00  12.110|   1:40  19.470|   2:20   8.512|   3:00   5.839|   3:40   4.562
00760>       0:25   5.533|   1:05  15.343|   1:45  16.418|   2:25   8.022|   3:05   5.633|   3:45   4.447
00761>       0:30   5.945|   1:10  21.869|   1:50  14.298|   2:30   7.594|   3:10   5.444|   3:50   4.338
00762>       0:35   6.438|   1:15  45.912|   1:55  12.729|   2:35   7.217|   3:15   5.269|   3:55   4.235
00763>       0:40   7.041|   1:20 201.334|   2:00  11.515|   2:40   6.881|   3:20   5.108|   4:00   4.138
00764>
00765> ------------------------------------------------------------------------------------------------------------
00766> R0001:C00025------------------------------------------------------------------------------------------------
00767> *#-----------------|--------------------------------------------------------|
00768> *#-----------------|---------------------EXISTING-----------------------------|
00769> --------------------
00770> | CALIB NASHYD         |   Area    (ha)=    2.390   Curve Number   (CN)= 60.30
00771> | 01:101        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
00772> ----------------------   U.H. Tp(hrs)=     .410
00773>
00774>      Unit Hyd Qpeak  (cms)=     .223
00775>
00776>      PEAK FLOW       (cms)=     .051 (i)
00777>      TIME TO PEAK    (hrs)=    1.883
00778>      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
00779>      AVERAGE FLOW    (cms)=     .012
00780>      RUNOFF VOLUME    (mm)=   12.459
00781>      TOTAL RAINFALL   (mm)=   58.997
00782>      RUNOFF COEFFICIENT   =     .211
00783>
00784>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00785>
00786> ------------------------------------------------------------------------------------------------------------
00787> R0001:C00026------------------------------------------------------------------------------------------------
00788> *#-----------------|---------------------PROPOSED-----------------------------|
00789> --------------------------
00790> | CALIB STANDHYD       |   Area    (ha)=    3.89
00791> | 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
00792> --------------------------
00793>                              IMPERVIOUS    PERVIOUS (i)
00794>      Surface Area     (ha)=      1.88         2.01
00795>      Dep. Storage     (mm)=      2.00         5.00
00796>      Average Slope     (%)=      2.00         2.00
00797>      Length            (m)=    100.00        35.00
00798>      Mannings n            =      .013         .250
00799>
00800>      Max.eff.Inten.(mm/hr)=    201.33        31.95
00801>                 over (min)=      2.00        12.00
00802>      Storage Coeff.  (min)=      1.57 (ii)   11.85 (ii)
00803>      Unit Hyd. Tpeak (min)=      2.00        12.00
00804>      Unit Hyd. peak  (cms)=       .65          .10
00805>                                                      *TOTALS*
00806>      PEAK FLOW       (cms)=       .54          .11          .571 (iii)
00807>      TIME TO PEAK    (hrs)=      1.33         1.52         1.333
00808>      RUNOFF VOLUME    (mm)=     57.00        12.80        24.425
00809>      TOTAL RAINFALL   (mm)=     59.00        59.00        58.997
00810>      RUNOFF COEFFICIENT   =       .97          .22          .414
00811>
00812>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00813>            CN* =  49.0     Ia = Dep. Storage  (Above)
00814>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00815>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00816>
00817> ------------------------------------------------------------------------------------------------------------
00818> R0001:C00027------------------------------------------------------------------------------------------------
00819> *#-----------------|---------------------------------------------------------|
00820> *#-----------------|---------------------POND--------------------------------|
00821> ---------------------
00822> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00823> |  IN>01:201          |
00824> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
00825> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00826>                          (cms)   (ha.m.)|    (cms)   (ha.m.)|    (cms)   (ha.m.)|    (cms)   (ha.m.)
00827>                          .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
00828>                          .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
00829>                          .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
00830>
00831>     ROUTING RESULTS             AREA     QPEAK     TPEAK      R.V.
00832>     ---------------             (ha)     (cms)     (hrs)      (mm)
00833>      INFLOW > 01:201           3.890      .571     1.333     24.425
00834>     OUTFLOW < 02:POND          3.890      .018     4.033     24.424
00835>    OVERFLOW < 03:POND OUT       .000      .000      .000       .000
00836>
00837>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00838>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00839>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00840>
00841>
00842>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.159
00843>                     TIME SHIFT OF PEAK FLOW          (min)=   162.00
00844>                     MAXIMUM  STORAGE   USED        (ha.m.)=.7624E-01
00845>
00846> ------------------------------------------------------------------------------------------------------------
00847> R0001:C00028------------------------------------------------------------------------------------------------
00848> *#-----------------|---------------------------------------------------------|
00849> *#-----------------|---------------------------------------------------------|
00850> --------------------------
00851> | CALIB STANDHYD       |   Area    (ha)=     .35
00852> | 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
00853> --------------------------
00854>                              IMPERVIOUS    PERVIOUS (i)
00855>      Surface Area     (ha)=       .15          .20
00856>      Dep. Storage     (mm)=      2.00         5.00
00857>      Average Slope     (%)=      2.00         2.00
00858>      Length            (m)=    100.00        35.00
00859>      Mannings n            =      .013         .250
00860>
00861>      Max.eff.Inten.(mm/hr)=    201.33        48.32
00862>                 over (min)=      2.00        10.00
00863>      Storage Coeff.  (min)=      1.57 (ii)   10.28 (ii)
00864>      Unit Hyd. Tpeak (min)=      2.00        10.00
00865>      Unit Hyd. peak  (cms)=       .65          .11
00866>                                                      *TOTALS*
00867>      PEAK FLOW       (cms)=       .01          .02          .017 (iii)
00868>      TIME TO PEAK    (hrs)=      1.33         1.48         1.483
00869>      RUNOFF VOLUME    (mm)=     57.00        14.61        15.801
00870>      TOTAL RAINFALL   (mm)=     59.00        59.00        58.997
00871>      RUNOFF COEFFICIENT   =       .97          .25          .268
00872>
00873>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00874>            CN* =  49.0     Ia = Dep. Storage  (Above)
00875>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00876>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00877>
00878> ------------------------------------------------------------------------------------------------------------
00879> R0001:C00029------------------------------------------------------------------------------------------------
00880> *#-----------------|---------------------------------------------------------|
00881> --------------------------
00882> | CALIB STANDHYD       |   Area    (ha)=     .17
00883> | 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
00884> --------------------------
00885>                              IMPERVIOUS    PERVIOUS (i)
00886>      Surface Area     (ha)=       .07          .10
00887>      Dep. Storage     (mm)=      2.00         5.00
00888>      Average Slope     (%)=      2.00         2.00
00889>      Length            (m)=    100.00        35.00
00890>      Mannings n            =      .013         .250
00891>
00892>      Max.eff.Inten.(mm/hr)=    201.33        48.19
00893>                 over (min)=      2.00        10.00
00894>      Storage Coeff.  (min)=      1.57 (ii)   10.29 (ii)
00895>      Unit Hyd. Tpeak (min)=      2.00        10.00
00896>      Unit Hyd. peak  (cms)=       .74          .11
00897>                                                      *TOTALS*
00898>      PEAK FLOW       (cms)=       .00          .01          .008 (iii)
00899>      TIME TO PEAK    (hrs)=      1.33         1.48         1.483
00900>      RUNOFF VOLUME    (mm)=     57.00        14.60        14.641
00901>      TOTAL RAINFALL   (mm)=     59.00        59.00        58.997
00902>      RUNOFF COEFFICIENT   =       .97          .25          .248
00903>
00904>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00905>            CN* =  49.0     Ia = Dep. Storage  (Above)
00906>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00907>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00908>
00909> ------------------------------------------------------------------------------------------------------------
00910> R0001:C00030------------------------------------------------------------------------------------------------
00911> ------------------------
00912> | ADD HYD              |
00913> | 06:CULVERT           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00914> ------------------------                      (ha)     (cms)    (hrs)      (mm)     (cms)
00915>                          ID 1 02:POND        3.890      .018     4.033    24.424     .000
00916>                         +ID 2 03:POND OUT     .000      .000      .000      .000     .000  **DRY**
00917>                         +ID 3 04:202          .350      .017     1.483    15.801     .000
00918>                         +ID 4 05:203          .170      .008     1.483    14.641     .000
00919>                         ==========================================================
00920>                         SUM   06:CULVERT     4.410      .039     1.483    23.363     .000
00921>
00922>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00923>
00924> ------------------------------------------------------------------------------------------------------------
```

```
R0001:C00031
*#------------------|--------------------------------------------------------------------|
*#------------------|--------------------------------------------------------------------|
*#------------------|-------------------------PROPOSED----------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=     .12
| 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=        .05          .07
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     201.33        48.32
                   over (min)=       2.00        10.00
      Storage Coeff.  (min)=       1.57 (ii)   10.28 (ii)
      Unit Hyd. Tpeak (min)=       2.00        10.00
      Unit Hyd. peak  (cms)=        .65          .11
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .00          .01          .006 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.48         1.483
      RUNOFF VOLUME    (mm)=      57.00        14.61        16.225
      TOTAL RAINFALL   (mm)=      59.00        59.00        58.997
      RUNOFF COEFFICIENT   =        .97          .25          .275

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00032
*#------------------|--------------------------------------------------------------------|
*#------------------|-------------------PROPOSED-----------------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=     .12
| 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=        .06          .06
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     201.33        13.19
                   over (min)=       2.00        16.00
      Storage Coeff.  (min)=       1.57 (ii)   16.21 (ii)
      Unit Hyd. Tpeak (min)=       2.00        16.00
      Unit Hyd. peak  (cms)=        .65          .08
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .03          .00          .031 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.60         1.333
      RUNOFF VOLUME    (mm)=      57.00         9.16        32.264
      TOTAL RAINFALL   (mm)=      59.00        59.00        58.997
      RUNOFF COEFFICIENT   =        .97          .16          .547

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00033
*#------------------|--------------------EXISTING----------------------------------------|
------------------------
| CALIB NASHYD           |   Area     (ha)=    2.960   Curve Number    (CN)= 60.30
| 07:102        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
------------------------  U.H. Tp(hrs)=     .440

      Unit Hyd Qpeak  (cms)=     .257

      PEAK FLOW       (cms)=     .061 (i)
      TIME TO PEAK    (hrs)=    1.933
      DURATION        (hrs)=   6.967, (dddd|hh:mm:)=   0|06:58
      AVERAGE FLOW    (cms)=     .015
      RUNOFF VOLUME    (mm)=   12.459
      TOTAL RAINFALL   (mm)=   58.997
      RUNOFF COEFFICIENT   =     .211

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

R0001:C00034
*#------------------|--------------------PROPOSED----------------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=     .55
| 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=        .21          .34
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     201.33        41.69
                   over (min)=       2.00        11.00
      Storage Coeff.  (min)=       1.57 (ii)   10.81 (ii)
      Unit Hyd. Tpeak (min)=       2.00        11.00
      Unit Hyd. peak  (cms)=        .67          .10
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .00          .02          .024 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.50         1.500
      RUNOFF VOLUME    (mm)=      57.00        14.07        14.112
      TOTAL RAINFALL   (mm)=      59.00        59.00        58.997
      RUNOFF COEFFICIENT   =        .97          .24          .239

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00035
*#**************************************************************************
*#                          10-YEAR, 4 HOUR CHICAGO STORM
*#**************************************************************************
*#------------------|--------------------------------------------------------------------|
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 661.481
| Ptotal= 50.36 mm |                          B=   1.500
--------------------                          C=    .722
                           used in:   INTENSITY =  A / (t + B)^C

                           Duration of storm  =  4.00 hrs
                           Storm time step    =  5.00 min
                           Time to peak ratio =   .33

                      The CORRELATION coefficient is = .9996327

                       TIME        ENTERED             COMPUTED
                       (min)       (mm/hr)             (mm/hr)
                         5.         184.40              171.24
                        10.         113.70              113.42
                        15.          85.70               87.40
                        30.          52.80               54.79
                        60.          32.60               33.80
                       120.          20.10               20.68
                       360.           9.30                9.41
                       720.           5.80                5.71
                      1440.           3.60                3.47

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:05    3.758|  0:45    6.675|  1:25   49.857|  2:05    9.019|  2:45    5.633|  3:25    4.245
      0:10    3.956|  0:50    7.518|  1:30   28.517|  2:10    8.339|  2:50    5.401|  3:30    4.125
      0:15    4.181|  0:55    8.670|  1:35   20.765|  2:15    7.769|  2:55    5.191|  3:35    4.013
      0:20    4.438|  1:00   10.356|  1:40   16.637|  2:20    7.284|  3:00    4.999|  3:40    3.908
      0:25    4.737|  1:05   13.115|  1:45   14.034|  2:25    6.865|  3:05    4.823|  3:45    3.809
      0:30    5.089|  1:10   18.683|  1:50   12.224|  2:30    6.499|  3:10    4.662|  3:50    3.716
      0:35    5.511|  1:15   39.164|  1:55   10.885|  2:35    6.177|  3:15    4.512|  3:55    3.628
      0:40    6.027|  1:20 171.236|  2:00    9.848|  2:40    5.890|  3:20    4.374|  4:00    3.545

R0001:C00036
*#------------------|--------------------------------------------------------------------|
*#------------------|-------------------EXISTING-----------------------------------------|
------------------------
| CALIB NASHYD           |   Area     (ha)=    2.390   Curve Number    (CN)= 60.30
| 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
------------------------  U.H. Tp(hrs)=     .410

      Unit Hyd Qpeak  (cms)=     .223

      PEAK FLOW       (cms)=     .036 (i)
      TIME TO PEAK    (hrs)=    1.900
      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
      AVERAGE FLOW    (cms)=     .009
      RUNOFF VOLUME    (mm)=    9.038
      TOTAL RAINFALL   (mm)=   50.359
      RUNOFF COEFFICIENT   =     .179

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

R0001:C00037
*#------------------|--------------------PROPOSED----------------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=    3.89
| 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       1.88         2.01
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     171.24        21.31
                   over (min)=       2.00        14.00
      Storage Coeff.  (min)=       1.67 (ii)   13.76 (ii)
      Unit Hyd. Tpeak (min)=       2.00        14.00
      Unit Hyd. peak  (cms)=        .62          .08
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .46          .07          .473 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.55         1.333
      RUNOFF VOLUME    (mm)=      48.36         9.47        19.695
      TOTAL RAINFALL   (mm)=      50.36        50.36        50.359
      RUNOFF COEFFICIENT   =        .96          .19          .391

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00038
*#------------------|--------------------------------------------------------------------|
*#------------------|---------------------POND-----------------------------------------|
------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:201          |
| OUT<02:POND         | ========================  OUTFLOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                       .000 .0000E+00|   .017 .5900E-01|   .022 .1280E+00|   .667 .2070E+00
                       .009 .1500E-01|   .019 .9200E-01|   .098 .1660E+00|  1.958 .2510E+00
                       .013 .3300E-01|   .022 .1280E+00|   .667 .2070E+00|   .000 .0000E+00

     ROUTING RESULTS             AREA     QPEAK     TPEAK      R.V.
     ---------------------------  (ha)     (cms)     (hrs)      (mm)
      INFLOW > 01:201           3.890      .473     1.333     19.695
     OUTFLOW < 02:POND          3.890      .017     4.033     19.695
    OVERFLOW < 03:POND OUT       .000      .000      .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.601
                    TIME SHIFT OF PEAK FLOW         (min)=   162.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.5940E-01

R0001:C00039
*#------------------|--------------------------------------------------------------------|
*#------------------|--------------------------------------------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=     .35
| 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=        .15          .20
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     171.24        31.62
                   over (min)=       2.00        12.00
      Storage Coeff.  (min)=       1.67 (ii)   12.00 (ii)
      Unit Hyd. Tpeak (min)=       2.00        12.00
      Unit Hyd. peak  (cms)=        .63          .09
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .00          .01          .012 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.52         1.517
      RUNOFF VOLUME    (mm)=      48.36        10.89        11.941
      TOTAL RAINFALL   (mm)=      50.36        50.36        50.359
      RUNOFF COEFFICIENT   =        .96          .22          .237

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00040
*#------------------|--------------------------------------------------------------------|
------------------------
| CALIB STANDHYD         |   Area     (ha)=     .17
| 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
------------------------
                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=        .07          .10
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       2.00         2.00
      Length            (m)=     100.00        35.00
      Mannings n             =      .013         .250

      Max.eff.Inten.(mm/hr)=     171.24        31.53
                   over (min)=       2.00        12.00
      Storage Coeff.  (min)=       1.67 (ii)   12.01 (ii)
      Unit Hyd. Tpeak (min)=       2.00        12.00
      Unit Hyd. peak  (cms)=        .72          .10
                                                      *TOTALS*
      PEAK FLOW       (cms)=        .00          .01          .005 (iii)
      TIME TO PEAK    (hrs)=       1.32         1.52         1.517
      RUNOFF VOLUME    (mm)=      48.36        10.88        10.917
      TOTAL RAINFALL   (mm)=      50.36        50.36        50.359
      RUNOFF COEFFICIENT   =        .96          .22          .217

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00041
------------------------
| ADD HYD              |
| 06:CULVERT           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------------                       (ha)     (cms)    (hrs)      (mm)     (cms)
                          ID 1 02:POND        3.890     .017    4.033     19.695    .000
                         +ID 2 03:POND OUT     .000     .000     .000      .000    .000  **DRY**
                         +ID 3 04:202          .350     .012    1.517     11.941    .000
```

```
                    +ID 4 05:203             .170     .005    1.517    10.917    .000
                    ==========================================================
                    SUM   06:CULVERT         4.410     .030    1.517    18.741    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00042----------------------------------------------------------------------------------------------
*#-----------------|-------------------------------------------------------------|
*#-----------------|-------------------------------------------------------------|
*#-----------------|--------------------PROPOSED---------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=     .12
| 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .05          .07
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     171.24        31.62
                   over (min)      2.00        12.00
     Storage Coeff.  (min)=      1.67 (ii)   12.00 (ii)
     Unit Hyd. Tpeak (min)=      2.00        12.00
     Unit Hyd. peak  (cms)=       .63          .10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .00          .00          .004 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.52         1.517
     RUNOFF VOLUME    (mm)=     48.36        10.89        12.316
     TOTAL RAINFALL   (mm)=     50.36        50.36        50.359
     RUNOFF COEFFICIENT   =       .96          .22          .245

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00043----------------------------------------------------------------------------------------------
*#-----------------|--------------------PROPOSED---------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=     .12
| 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .06          .06
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     171.24         8.52
                   over (min)      2.00        19.00
     Storage Coeff.  (min)=      1.67 (ii)   19.12 (ii)
     Unit Hyd. Tpeak (min)=      2.00        19.00
     Unit Hyd. peak  (cms)=       .62          .07
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .03          .00          .026 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.68         1.333
     RUNOFF VOLUME    (mm)=     48.36         6.64        26.791
     TOTAL RAINFALL   (mm)=     50.36        50.36        50.359
     RUNOFF COEFFICIENT   =       .96          .13          .532

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00044----------------------------------------------------------------------------------------------
*#-----------------|--------------------EXISTING---------------------------------|
 ------------------------
| CALIB NASHYD           |   Area    (ha)=    2.960   Curve Number    (CN)= 60.30
| 07:102        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=     .440

     Unit Hyd Qpeak  (cms)=     .257

     PEAK FLOW       (cms)=     .043 (i)
     TIME TO PEAK    (hrs)=    1.950
     DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
     AVERAGE FLOW    (cms)=     .011
     RUNOFF VOLUME    (mm)=    9.038
     TOTAL RAINFALL   (mm)=   50.359
     RUNOFF COEFFICIENT   =     .179

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

--------------------------------------------------------------------------------------------------------
R0001:C00045----------------------------------------------------------------------------------------------
*#-----------------|--------------------PROPOSED---------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=     .55
| 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=    .10
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .21          .34
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     171.24        28.89
                   over (min)      2.00        12.00
     Storage Coeff.  (min)=      1.67 (ii)   12.38 (ii)
     Unit Hyd. Tpeak (min)=      2.00        12.00
     Unit Hyd. peak  (cms)=       .65          .09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .00          .02          .016 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.52         1.517
     RUNOFF VOLUME    (mm)=     48.36        10.46        10.499
     TOTAL RAINFALL   (mm)=     50.36        50.36        50.359
     RUNOFF COEFFICIENT   =       .96          .21          .208

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00046----------------------------------------------------------------------------------------------
*****************************************************************************
*#                          5-YEAR, 4 HOUR CHICAGO STORM
*****************************************************************************
*#-----------------|-------------------------------------------------------------|
 --------------------
| CHICAGO STORM    |    IDF curve parameters: A= 567.032
| Ptotal= 43.41 mm |                          B=   1.500
 --------------------                         C=    .721
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =  .33

                     The CORRELATION coefficient is = .9996319

                       TIME        ENTERED             COMPUTED
                      (min)       (mm/hr)              (mm/hr)
                         5.        158.30               147.06
                        10.         97.60                97.46
                        15.         73.60                75.13
                        30.         45.40                47.13
                        60.         28.00                29.10
                       120.         17.30                17.81
                       360.          8.00                8.11
                       720.          5.00                4.93
                      1440.          3.10                2.99

      TIME    RAIN|   TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05   3.250|   0:45   5.768|  1:25  42.927|  2:05   7.790|  2:45   4.869|  3:25   3.671
       0:10   3.421|   0:50   6.496|  1:30  24.581|  2:10   7.203|  2:50   4.669|  3:30   3.567
       0:15   3.615|   0:55   7.489|  1:35  17.910|  2:15   6.712|  2:55   4.487|  3:35   3.470
       0:20   3.838|   1:00   8.943|  1:40  14.355|  2:20   6.293|  3:00   4.322|  3:40   3.379
       0:25   4.096|   1:05  11.321|  1:45  12.112|  2:25   5.932|  3:05   4.170|  3:45   3.294
       0:30   4.400|   1:10  16.117|  1:50  10.553|  2:30   5.616|  3:10   4.030|  3:50   3.214
       0:35   4.764|   1:15  33.734|  1:55   9.399|  2:35   5.338|  3:15   3.902|  3:55   3.138
       0:40   5.209|   1:20 147.061|  2:00   8.505|  2:40   5.091|  3:20   3.782|  4:00   3.066

--------------------------------------------------------------------------------------------------------
R0001:C00047----------------------------------------------------------------------------------------------
*#-----------------|--------------------EXISTING---------------------------------|
 ------------------------
| CALIB NASHYD           |   Area    (ha)=    2.390   Curve Number    (CN)= 60.30
| 01:101        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=     .410

     Unit Hyd Qpeak  (cms)=     .223

     PEAK FLOW       (cms)=     .026 (i)
     TIME TO PEAK    (hrs)=    1.917
     DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
     AVERAGE FLOW    (cms)=     .006
     RUNOFF VOLUME    (mm)=    6.607
     TOTAL RAINFALL   (mm)=   43.406
     RUNOFF COEFFICIENT   =     .152

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

--------------------------------------------------------------------------------------------------------
R0001:C00048----------------------------------------------------------------------------------------------
*#-----------------|--------------------PROPOSED---------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=    3.89
| 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.88         2.01
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     147.06        14.54
                   over (min)      2.00        16.00
     Storage Coeff.  (min)=      1.78 (ii)   15.87 (ii)
     Unit Hyd. Tpeak (min)=      2.00        16.00
     Unit Hyd. peak  (cms)=       .60          .07
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .39          .05          .398 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.60         1.333
     RUNOFF VOLUME    (mm)=     41.41         7.08        16.106
     TOTAL RAINFALL   (mm)=     43.41        43.41        43.406
     RUNOFF COEFFICIENT   =       .95          .16          .371

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00049----------------------------------------------------------------------------------------------
*#-----------------|--------------------POND-------------------------------------|
*#-----------------|--------------------POND-------------------------------------|
 ------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:201          |
| OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
 ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .017 .5900E-01|   .022 .1280E+00|   .667 .2070E+00
                        .009 .1500E-01|   .019 .9200E-01|   .098 .1660E+00|  1.958 .2510E+00
                        .013 .3300E-01|   .022 .1280E+00|   .667 .2070E+00|   .000 .0000E+00

     ROUTING RESULTS             AREA     QPEAK     TPEAK      R.V.
     ---------------             (ha)     (cms)     (hrs)      (mm)
     INFLOW > 01:201            3.890      .398     1.333     16.106
    OUTFLOW < 02:POND           3.890      .015     4.017     16.106
   OVERFLOW < 03:POND OUT        .000      .000      .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.820
                    TIME SHIFT OF PEAK FLOW         (min)=   161.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.4723E-01

--------------------------------------------------------------------------------------------------------
R0001:C00050----------------------------------------------------------------------------------------------
*#-----------------|-------------------------------------------------------------|
*#-----------------|-------------------------------------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=     .35
| 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .15          .20
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     147.06        21.51
                   over (min)      2.00        14.00
     Storage Coeff.  (min)=      1.78 (ii)   13.82 (ii)
     Unit Hyd. Tpeak (min)=      2.00        14.00
     Unit Hyd. peak  (cms)=       .60          .08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .00          .01          .008 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.55         1.550
     RUNOFF VOLUME    (mm)=     41.41         8.21         9.135
     TOTAL RAINFALL   (mm)=     43.41        43.41        43.406
     RUNOFF COEFFICIENT   =       .95          .19          .210

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00051----------------------------------------------------------------------------------------------
*#-----------------|-------------------------------------------------------------|
 ------------------------
| CALIB STANDHYD         |   Area    (ha)=     .17
| 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=    .10
 ------------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .07          .10
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n            =      .013         .250

     Max.eff.Inten.(mm/hr)=     147.06        21.45
                   over (min)      2.00        14.00
     Storage Coeff.  (min)=      1.78 (ii)   13.84 (ii)
     Unit Hyd. Tpeak (min)=      2.00        14.00
     Unit Hyd. peak  (cms)=       .71          .08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .00          .00          .004 (iii)
     TIME TO PEAK    (hrs)=      1.33         1.55         1.550
     RUNOFF VOLUME    (mm)=     41.41         8.20         8.229
     TOTAL RAINFALL   (mm)=     43.41        43.41        43.406
     RUNOFF COEFFICIENT   =       .95          .19          .190

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. 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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R0001:C00052----------------------------------------------------------------------------------------------
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01541> ------------------------
01542> | ADD HYD              |
01543> | 06:CULVERT           |   ID:NHYD          AREA     QPEAK    TPEAK     R.V.     DWF
01544> ------------------------                    (ha)     (cms)    (hrs)     (mm)    (cms)
01545>                          ID 1 02:POND         3.890     .015    4.017   16.106    .000
01546>                         +ID 2 03:POND OUT      .000     .000     .000     .000    .000  **DRY**
01547>                         +ID 3 04:202           .350     .008    1.550    9.135    .000
01548>                         +ID 4 05:203           .170     .004    1.550    8.229    .000
01549>                          ========================================================
01550>                          SUM   06:CULVERT      4.410     .023    1.583   15.249    .000
01551>
01552>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01553>
01554> ---------------------------------------------------------------------------------------------
01555> R0001:C00053-------------------------------------------------------------------------------
01556> *#-----------------|-----------------------------------------------------------|
01557> *#-----------------|-----------------------------------------------------------|
01558> *#-----------------|----------------------PROPOSED-----------------------------|
01559> ------------------------
01560> | CALIB STANDHYD       |   Area    (ha)=     .12
01561> | 09:204       DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
01562> ------------------------
01563>                           IMPERVIOUS    PERVIOUS (i)
01564>      Surface Area     (ha)=       .05          .07
01565>      Dep. Storage     (mm)=      2.00         5.00
01566>      Average Slope     (%)=      2.00         2.00
01567>      Length            (m)=    100.00        35.00
01568>      Mannings n            =      .013         .250
01569>
01570>      Max.eff.Inten.(mm/hr)=    147.06        21.51
01571>                 over (min)      2.00        14.00
01572>      Storage Coeff.  (min)=      1.78 (ii)   13.82 (ii)
01573>      Unit Hyd. Tpeak (min)=      2.00        14.00
01574>      Unit Hyd. peak  (cms)=       .60          .08
01575>                                                      *TOTALS*
01576>      PEAK FLOW       (cms)=       .00          .00         .003 (iii)
01577>      TIME TO PEAK    (hrs)=      1.33         1.55        1.550
01578>      RUNOFF VOLUME    (mm)=     41.41         8.21        9.467
01579>      TOTAL RAINFALL   (mm)=     43.41        43.41       43.406
01580>      RUNOFF COEFFICIENT   =       .95          .19         .218
01581>
01582>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01583>            CN* =  49.0    Ia = Dep. Storage  (Above)
01584>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01585>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01586>
01587> ---------------------------------------------------------------------------------------------
01588> R0001:C00054-------------------------------------------------------------------------------
01589> *#-----------------|-----------------------PROPOSED----------------------------|
01590> ------------------------
01591> | CALIB STANDHYD       |   Area    (ha)=     .12
01592> | 10:205       DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
01593> ------------------------
01594>                           IMPERVIOUS    PERVIOUS (i)
01595>      Surface Area     (ha)=       .06          .06
01596>      Dep. Storage     (mm)=      2.00         5.00
01597>      Average Slope     (%)=      2.00         2.00
01598>      Length            (m)=    100.00        35.00
01599>      Mannings n            =      .013         .250
01600>
01601>      Max.eff.Inten.(mm/hr)=    147.06         5.64
01602>                 over (min)      2.00        22.00
01603>      Storage Coeff.  (min)=      1.78 (ii)   22.35 (ii)
01604>      Unit Hyd. Tpeak (min)=      2.00        22.00
01605>      Unit Hyd. peak  (cms)=       .60          .07
01606>                                                      *TOTALS*
01607>      PEAK FLOW       (cms)=       .02          .00         .022 (iii)
01608>      TIME TO PEAK    (hrs)=      1.33         1.75        1.333
01609>      RUNOFF VOLUME    (mm)=     41.41         4.87       22.518
01610>      TOTAL RAINFALL   (mm)=     43.41        43.41       43.406
01611>      RUNOFF COEFFICIENT   =       .95          .11         .519
01612>
01613>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01614>            CN* =  49.0    Ia = Dep. Storage  (Above)
01615>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01616>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01617>
01618> ---------------------------------------------------------------------------------------------
01619> R0001:C00055-------------------------------------------------------------------------------
01620> *#-----------------|----------------------EXISTING----------------------------|
01621> ------------------------
01622> | CALIB NASHYD         |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
01623> | 07:102       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
01624> ------------------------   U.H. Tp(hrs)=     .440
01625>
01626>      Unit Hyd Qpeak  (cms)=     .257
01627>
01628>      PEAK FLOW       (cms)=     .031 (i)
01629>      TIME TO PEAK    (hrs)=    1.967
01630>      DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
01631>      AVERAGE FLOW    (cms)=     .008
01632>      RUNOFF VOLUME    (mm)=    6.607
01633>      TOTAL RAINFALL   (mm)=   43.406
01634>      RUNOFF COEFFICIENT   =     .152
01635>
01636>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01637>
01638> ---------------------------------------------------------------------------------------------
01639> R0001:C00056-------------------------------------------------------------------------------
01640> *#-----------------|----------PROPOSED----------------------------------------|
01641> ------------------------
01642> | CALIB STANDHYD       |   Area    (ha)=     .55
01643> | 08:206       DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
01644> ------------------------
01645>                           IMPERVIOUS    PERVIOUS (i)
01646>      Surface Area     (ha)=       .21          .34
01647>      Dep. Storage     (mm)=      2.00         5.00
01648>      Average Slope     (%)=      2.00         2.00
01649>      Length            (m)=    100.00        35.00
01650>      Mannings n            =      .013         .250
01651>
01652>      Max.eff.Inten.(mm/hr)=    147.06        19.62
01653>                 over (min)      2.00        14.00
01654>      Storage Coeff.  (min)=      1.78 (ii)   14.28 (ii)
01655>      Unit Hyd. Tpeak (min)=      2.00        14.00
01656>      Unit Hyd. peak  (cms)=       .63          .08
01657>                                                      *TOTALS*
01658>      PEAK FLOW       (cms)=       .00          .01         .011 (iii)
01659>      TIME TO PEAK    (hrs)=      1.33         1.55        1.550
01660>      RUNOFF VOLUME    (mm)=     41.41         7.86        7.897
01661>      TOTAL RAINFALL   (mm)=     43.41        43.41       43.406
01662>      RUNOFF COEFFICIENT   =       .95          .18         .182
01663>
01664>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01665>            CN* =  49.0    Ia = Dep. Storage  (Above)
01666>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01667>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01668>
01669> ---------------------------------------------------------------------------------------------
01670> R0001:C00057-------------------------------------------------------------------------------
01671> *#*************************************************************************
01672> *#                        2 YEAR, 4 HOUR CHICAGO STORM
01673> *#*************************************************************************
01674> *#-----------------|-----------------------------------------------------------|
01675> --------------------
01676> | CHICAGO STORM    |    IDF curve parameters: A= 429.893
01677> | Ptotal= 32.55 mm |                          B=   1.500
01678> --------------------                          C=    .723
01679>                          used in:   INTENSITY =  A / (t + B)^C
01680>
01681>                          Duration of storm  =  4.00 hrs
01682>                          Storm time step    =  5.00 min
01683>                          Time to peak ratio =  .33
01684>
01685>                     The CORRELATION coefficient is = .9996866
01686>
01687>                      TIME        ENTERED             COMPUTED
01688>                     (min)        (mm/hr)              (mm/hr)
01689>                        5.         119.10               111.08
01690>                       10.          73.50                73.53
01691>                       15.          55.40                56.64
01692>                       30.          34.20                35.49
01693>                       60.          21.10                21.88
01694>                      120.          13.00                13.37
01695>                      360.           6.10                 6.08
01696>                      720.           3.70                 3.69
01697>                     1440.           2.30                 2.24
01698>
01699>      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
01700>      hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr
01701>       0:05   2.421|  0:45   4.303|  1:25  32.260|  2:05   5.817|  2:45   3.630|  3:25   2.735
01702>       0:10   2.548|  0:50   4.848|  1:30  18.431|  2:10   5.378|  2:50   3.481|  3:30   2.657
01703>       0:15   2.693|  0:55   5.592|  1:35  13.412|  2:15   5.010|  2:55   3.345|  3:35   2.585
01704>       0:20   2.859|  1:00   6.681|  1:40  10.742|  2:20   4.696|  3:00   3.221|  3:40   2.517
01705>       0:25   3.052|  1:05   8.465|  1:45   9.058|  2:25   4.426|  3:05   3.108|  3:45   2.453
01706>       0:30   3.280|  1:10  12.065|  1:50   7.888|  2:30   4.190|  3:10   3.004|  3:50   2.393
01707>       0:35   3.552|  1:15  25.330|  1:55   7.023|  2:35   3.981|  3:15   2.907|  3:55   2.337
01708>       0:40   3.885|  1:20 111.077|  2:00   6.353|  2:40   3.796|  3:20   2.818|  4:00   2.283
01709>
01710> ---------------------------------------------------------------------------------------------
01711> R0001:C00058-------------------------------------------------------------------------------
01712> *#-----------------|----------------------------------------------------------#----------|
01713> *#-----------------|----------------------EXISTING----------------------------|
01714> ------------------------
01715> | CALIB NASHYD         |   Area    (ha)=    2.390   Curve Number   (CN)= 60.30
01716> | 01:101       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
01717> ------------------------   U.H. Tp(hrs)=     .410
01718>
01719>      Unit Hyd Qpeak  (cms)=     .223
01720>
01721>      PEAK FLOW       (cms)=     .013 (i)
01722>      TIME TO PEAK    (hrs)=    1.950
01723>      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
01724>      AVERAGE FLOW    (cms)=     .003
01725>      RUNOFF VOLUME    (mm)=    3.461
01726>      TOTAL RAINFALL   (mm)=   32.549
01727>      RUNOFF COEFFICIENT   =     .106
01728>
01729>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01730>
01731> ---------------------------------------------------------------------------------------------
01732> R0001:C00059-------------------------------------------------------------------------------
01733> *#-----------------|----------------------PROPOSED----------------------------|
01734> ------------------------
01735> | CALIB STANDHYD       |   Area    (ha)=    3.89
01736> | 01:201       DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
01737> ------------------------
01738>                           IMPERVIOUS    PERVIOUS (i)
01739>      Surface Area     (ha)=      1.88         2.01
01740>      Dep. Storage     (mm)=      2.00         5.00
01741>      Average Slope     (%)=      2.00         2.00
01742>      Length            (m)=    100.00        35.00
01743>      Mannings n            =      .013         .250
01744>
01745>      Max.eff.Inten.(mm/hr)=    111.08         6.78
01746>                 over (min)      2.00        21.00
01747>      Storage Coeff.  (min)=      1.99 (ii)   21.10 (ii)
01748>      Unit Hyd. Tpeak (min)=      2.00        21.00
01749>      Unit Hyd. peak  (cms)=       .56          .05
01750>                                                      *TOTALS*
01751>      PEAK FLOW       (cms)=       .29          .02         .290 (iii)
01752>      TIME TO PEAK    (hrs)=      1.33         1.72        1.333
01753>      RUNOFF VOLUME    (mm)=     30.55         3.94       10.938
01754>      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
01755>      RUNOFF COEFFICIENT   =       .94          .12         .336
01756>
01757>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01758>            CN* =  49.0    Ia = Dep. Storage  (Above)
01759>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01760>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01761>
01762> ---------------------------------------------------------------------------------------------
01763> R0001:C00060-------------------------------------------------------------------------------
01764> *#-----------------|----------------------------------------------------------#----------|
01765> *#-----------------|-----------------------POND-------------------------------|
01766> --------------------
01767> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
01768> |  IN>01:201          |
01769> |  OUT<02:POND        | ========================  OUTLFOW STORAGE TABLE  ========================
01770> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
01771>                          (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m)
01772>                         .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
01773>                         .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
01774>                         .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
01775>
01776>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
01777>      ---------------           (ha)     (cms)     (hrs)       (mm)
01778>      INFLOW > 01:201          3.890      .290     1.333     10.938
01779>     OUTFLOW < 02:POND         3.890      .012     3.817     10.938
01780>    OVERFLOW < 03:POND OUT      .000      .000      .000      .000
01781>
01782>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
01783>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
01784>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
01785>
01786>
01787>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    4.256
01788>                     TIME SHIFT OF PEAK FLOW         (min)=   149.00
01789>                     MAXIMUM  STORAGE   USED       (ha.m.)=.3008E-01
01790>
01791> ---------------------------------------------------------------------------------------------
01792> R0001:C00061-------------------------------------------------------------------------------
01793> *#-----------------|----------------------------------------------------------#----------|
01794> *#-----------------|----------------------------------------------------------#----------|
01795> ------------------------
01796> | CALIB STANDHYD       |   Area    (ha)=     .35
01797> | 04:202       DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
01798> ------------------------
01799>                           IMPERVIOUS    PERVIOUS (i)
01800>      Surface Area     (ha)=       .15          .20
01801>      Dep. Storage     (mm)=      2.00         5.00
01802>      Average Slope     (%)=      2.00         2.00
01803>      Length            (m)=    100.00        35.00
01804>      Mannings n            =      .013         .250
01805>
01806>      Max.eff.Inten.(mm/hr)=    111.08        10.33
01807>                 over (min)      2.00        18.00
01808>      Storage Coeff.  (min)=      1.99 (ii)   18.14 (ii)
01809>      Unit Hyd. Tpeak (min)=      2.00        18.00
01810>      Unit Hyd. peak  (cms)=       .56          .06
01811>                                                      *TOTALS*
01812>      PEAK FLOW       (cms)=       .00          .00         .004 (iii)
01813>      TIME TO PEAK    (hrs)=      1.33         1.65        1.617
01814>      RUNOFF VOLUME    (mm)=     30.55         4.64        5.367
01815>      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
01816>      RUNOFF COEFFICIENT   =       .94          .14         .165
01817>
01818>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01819>            CN* =  49.0    Ia = Dep. Storage  (Above)
01820>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01821>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01822>
01823> ---------------------------------------------------------------------------------------------
01824> R0001:C00062-------------------------------------------------------------------------------
01825> *#-----------------|----------------------------------------------------------|
01826> ------------------------
01827> | CALIB STANDHYD       |   Area    (ha)=     .17
01828> | 05:203       DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
01829> ------------------------
01830>                           IMPERVIOUS    PERVIOUS (i)
01831>      Surface Area     (ha)=       .07          .10
01832>      Dep. Storage     (mm)=      2.00         5.00
01833>      Average Slope     (%)=      2.00         2.00
01834>      Length            (m)=    100.00        35.00
01835>      Mannings n            =      .013         .250
01836>
01837>      Max.eff.Inten.(mm/hr)=    111.08        10.30
01838>                 over (min)      2.00        18.00
01839>      Storage Coeff.  (min)=      1.99 (ii)   18.16 (ii)
01840>      Unit Hyd. Tpeak (min)=      2.00        18.00
01841>      Unit Hyd. peak  (cms)=       .69          .07
01842>                                                      *TOTALS*
01843>      PEAK FLOW       (cms)=       .00          .00         .002 (iii)
01844>      TIME TO PEAK    (hrs)=      1.33         1.65        1.650
01845>      RUNOFF VOLUME    (mm)=     30.55         4.64        4.661
01846>      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
01847>      RUNOFF COEFFICIENT   =       .94          .14         .143
01848>
```

```
        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00063
| ADD HYD              |
| 06:CULVERT           |   ID:NHYD          AREA     QPEAK    TPEAK      R.V.     DWF
                                              (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 02:POND          3.890     .012    3.817    10.938    .000
                       +ID 2 03:POND OUT       .000     .000     .000      .000    .000  **DRY**
                       +ID 3 04:202            .350     .004    1.617     5.367    .000
                       +ID 4 05:203            .170     .002    1.650     4.661    .000
                        SUM   06:CULVERT      4.410     .016    1.683    10.254    .000

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00064
*#-------------------|-------------------------------------------------------------|
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------PROPOSED-------------------------------|
| CALIB STANDHYD         |   Area     (ha)=     .12
| 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .05          .07
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    111.08        10.33
                  over (min)      2.00        18.00
      Storage Coeff.  (min)=      1.99 (ii)   18.14 (ii)
      Unit Hyd. Tpeak (min)=      2.00        18.00
      Unit Hyd. peak  (cms)=       .57          .07
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .00         .001 (iii)
      TIME TO PEAK    (hrs)=      1.33         1.65        1.333
      RUNOFF VOLUME    (mm)=     30.55         4.64        5.626
      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
      RUNOFF COEFFICIENT   =       .94          .14         .173

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00065
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------PROPOSED-------------------------------|
| CALIB STANDHYD         |   Area     (ha)=     .12
| 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .06          .06
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    111.08         2.42
                  over (min)      2.00        31.00
      Storage Coeff.  (min)=      1.99 (ii)   30.86 (ii)
      Unit Hyd. Tpeak (min)=      2.00        31.00
      Unit Hyd. peak  (cms)=       .56          .11
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .02          .00         .016 (iii)
      TIME TO PEAK    (hrs)=      1.33         1.77        1.333
      RUNOFF VOLUME    (mm)=     30.55         2.60       16.099
      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
      RUNOFF COEFFICIENT   =       .94          .08         .495

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00066
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------EXISTING-------------------------------|
| CALIB NASHYD           |   Area     (ha)=    2.960   Curve Number    (CN)= 60.30
| 07:102        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
                          |   U.H. Tp(hrs)=     .440

      Unit Hyd Qpeak  (cms)=     .257

      PEAK FLOW       (cms)=     .015 (i)
      TIME TO PEAK    (hrs)=    2.000
      DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
      AVERAGE FLOW    (cms)=     .004
      RUNOFF VOLUME    (mm)=    3.461
      TOTAL RAINFALL   (mm)=   32.549
      RUNOFF COEFFICIENT   =     .106

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

R0001:C00067
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------PROPOSED-------------------------------|
| CALIB STANDHYD         |   Area     (ha)=     .55
| 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .21          .34
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    111.08         9.10
                  over (min)      2.00        19.00
      Storage Coeff.  (min)=      1.99 (ii)   18.98 (ii)
      Unit Hyd. Tpeak (min)=      2.00        19.00
      Unit Hyd. peak  (cms)=       .60          .06
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .01         .005 (iii)
      TIME TO PEAK    (hrs)=      1.33         1.67        1.667
      RUNOFF VOLUME    (mm)=     30.55         4.43        4.454
      TOTAL RAINFALL   (mm)=     32.55        32.55       32.549
      RUNOFF COEFFICIENT   =       .94          .14         .137

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00068
*#-------------------|-------------------------------------------------------------|
*#*****************************************************************************
*#*****************************************************************************
*#                                  25mm Event
*#*****************************************************************************
*#*****************************************************************************
| CHICAGO STORM    |    IDF curve parameters: A= 568.700
| Ptotal= 24.99 mm |                          B=   6.662
                     |                          C=    .819
                          used in:   INTENSITY = A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =  .33

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
      hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr
       0:05   1.358|  0:45   2.816|  1:25  33.707|  2:05   4.184|  2:45   2.261|  3:25   1.581
       0:10   1.448|  0:50   3.291|  1:30  18.642|  2:10   3.771|  2:50   2.143|  3:30   1.525
       0:15   1.551|  0:55   3.972|  1:35  12.615|  2:15   3.435|  2:55   2.037|  3:35   1.474
       0:20   1.671|  1:00   5.034|  1:40   9.463|  2:20   3.156|  3:00   1.942|  3:40   1.426
       0:25   1.814|  1:05   6.907|  1:45   7.553|  2:25   2.920|  3:05   1.856|  3:45   1.381
       0:30   1.987|  1:10  11.025|  1:50   6.281|  2:30   2.720|  3:10   1.778|  3:50   1.339
       0:35   2.199|  1:15  26.158|  1:55   5.377|  2:35   2.546|  3:15   1.706|  3:55   1.300
       0:40   2.467|  1:20  76.067|  2:00   4.704|  2:40   2.395|  3:20   1.641|  4:00   1.264

R0001:C00069
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------EXISTING-------------------------------|
| CALIB NASHYD           |   Area     (ha)=    2.390   Curve Number    (CN)= 60.30
| 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
                          |   U.H. Tp(hrs)=     .410

      Unit Hyd Qpeak  (cms)=     .223

      PEAK FLOW       (cms)=     .007 (i)
      TIME TO PEAK    (hrs)=    2.000
      DURATION        (hrs)=    6.783, (dddd|hh:mm:)=   0|06:47
      AVERAGE FLOW    (cms)=     .002
      RUNOFF VOLUME    (mm)=    1.803
      TOTAL RAINFALL   (mm)=   24.991
      RUNOFF COEFFICIENT   =     .072

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

R0001:C00070
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------PROPOSED-------------------------------|
| CALIB STANDHYD         |   Area     (ha)=    3.89
| 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      1.88         2.01
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=     76.07         3.65
                  over (min)      2.00        27.00
      Storage Coeff.  (min)=      2.32 (ii)   26.80 (ii)
      Unit Hyd. Tpeak (min)=      2.00        27.00
      Unit Hyd. peak  (cms)=       .51          .04
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .19          .01         .195 (iii)
      TIME TO PEAK    (hrs)=      1.33         1.88        1.333
      RUNOFF VOLUME    (mm)=     22.99         2.24        7.694
      TOTAL RAINFALL   (mm)=     24.99        24.99       24.991
      RUNOFF COEFFICIENT   =       .92          .09         .308

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00071
*#-------------------|-------------------------------------------------------------|
*#-------------------|----------------------POND-----------------------------------|
 ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
   IN>01:201        |
| OUT<02:POND      | ========================  OUTFLOW STORAGE TABLE  ========================
 OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
    (cms)   (ha.m.)|    (cms)   (ha.m.)|    (cms)   (ha.m.)|    (cms)   (ha.m.)|    (cms)   (ha.m.)
     .000 .0000E+00|     .017 .5900E-01|     .022 .1280E+00|     .667 .2070E+00
     .009 .1500E-01|     .019 .9200E-01|     .098 .1660E+00|    1.958 .2510E+00
     .013 .3300E-01|     .022 .1280E+00|     .667 .2070E+00|     .000 .0000E+00

      ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
      ---------------             (ha)     (cms)     (hrs)       (mm)
      INFLOW > 01:201            3.890      .195     1.333      7.694
     OUTFLOW < 02:POND           3.890      .010     3.033      7.694
    OVERFLOW < 03:POND OUT        .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =         0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=       .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=       .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    5.265
                    TIME SHIFT OF PEAK FLOW          (min)=   102.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=.2059E-01

R0001:C00072
*#-------------------|-------------------------------------------------------------|
*#-------------------|-------------------------------------------------------------|
| CALIB STANDHYD         |   Area     (ha)=     .35
| 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .15          .20
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=     76.07         5.64
                  over (min)      2.00        23.00
      Storage Coeff.  (min)=      2.32 (ii)   22.89 (ii)
      Unit Hyd. Tpeak (min)=      2.00        23.00
      Unit Hyd. peak  (cms)=       .51          .05
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .00         .002 (iii)
      TIME TO PEAK    (hrs)=      1.33         1.78        1.767
      RUNOFF VOLUME    (mm)=     22.99         2.68        3.247
      TOTAL RAINFALL   (mm)=     24.99        24.99       24.991
      RUNOFF COEFFICIENT   =       .92          .11         .130

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00073
*#-------------------|-------------------------------------------------------------|
*#-------------------|-------------------------------------------------------------|
| CALIB STANDHYD         |   Area     (ha)=     .17
| 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .07          .10
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=     76.07         5.62
                  over (min)      2.00        23.00
      Storage Coeff.  (min)=      2.32 (ii)   22.91 (ii)
      Unit Hyd. Tpeak (min)=      2.00        23.00
      Unit Hyd. peak  (cms)=       .79          .06
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .00         .001 (iii)
      TIME TO PEAK    (hrs)=      1.30         1.78        1.783
      RUNOFF VOLUME    (mm)=     22.99         2.67        2.695
      TOTAL RAINFALL   (mm)=     24.99        24.99       24.991
      RUNOFF COEFFICIENT   =       .92          .11         .108

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. 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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02157> ------------------------------------------------------------------------------------------------
02158> R0001:C00074------------------------------------------------------------------------------------
02159> -------------------------
02160> | ADD HYD          |
02161> | 06:CULVERT       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
02162> -------------------------                      (ha)     (cms)    (hrs)      (mm)   (cms)
02163>                        ID 1 02:POND          3.890     .010    3.033     7.694    .000
02164>                       +ID 2 03:POND OUT      .000     .000     .000      .000    .000  **DRY**
02165>                       +ID 3 04:202           .350     .002    1.767     3.247    .000
02166>                       +ID 4 05:203           .170     .001    1.783     2.695    .000
02167>                       ========================================================================
02168>                       SUM   06:CULVERT      4.410     .013    1.850     7.148    .000
02169>
02170>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
02171>
02172> ------------------------------------------------------------------------------------------------
02173> R0001:C00075------------------------------------------------------------------------------------
02174> *#-----------------|---------------------------------------------------------|
02175> *#-----------------|---------------------------------------------------------|
02176> *#-----------------|----------------------PROPOSED---------------------------|
02177> -------------------------
02178> | CALIB STANDHYD   |   Area    (ha)=     .12
02179> | 09:204       DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
02180> -------------------------
02181>                          IMPERVIOUS    PERVIOUS (i)
02182>      Surface Area     (ha)=       .05         .07
02183>      Dep. Storage     (mm)=      2.00        5.00
02184>      Average Slope     (%)=      2.00        2.00
02185>      Length            (m)=    100.00       35.00
02186>      Mannings n            =      .013        .250
02187>
02188>      Max.eff.Inten.(mm/hr)=     76.07        5.64
02189>                   over (min)      2.00       23.00
02190>      Storage Coeff.  (min)=      2.32 (ii)   22.89 (ii)
02191>      Unit Hyd. Tpeak (min)=      2.00       23.00
02192>      Unit Hyd. peak  (cms)=       .52         .06
02193>                                                      *TOTALS*
02194>      PEAK FLOW       (cms)=       .00         .00         .001 (iii)
02195>      TIME TO PEAK    (hrs)=      1.33        1.78        1.333
02196>      RUNOFF VOLUME    (mm)=     22.99        2.68        3.450
02197>      TOTAL RAINFALL   (mm)=     24.99       24.99       24.991
02198>      RUNOFF COEFFICIENT   =       .92         .11         .138
02199>
02200>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02201>            CN* =  49.0    Ia = Dep. Storage  (Above)
02202>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02203>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02204>
02205> ------------------------------------------------------------------------------------------------
02206> R0001:C00076------------------------------------------------------------------------------------
02207> *#-----------------|----------------------PROPOSED---------------------------|
02208> -------------------------
02209> | CALIB STANDHYD   |   Area    (ha)=     .12
02210> | 10:205       DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
02211> -------------------------
02212>                          IMPERVIOUS    PERVIOUS (i)
02213>      Surface Area     (ha)=       .06         .06
02214>      Dep. Storage     (mm)=      2.00        5.00
02215>      Average Slope     (%)=      2.00        2.00
02216>      Length            (m)=    100.00       35.00
02217>      Mannings n            =      .013        .250
02218>
02219>      Max.eff.Inten.(mm/hr)=     76.07        3.45
02220>                   over (min)      2.00       27.00
02221>      Storage Coeff.  (min)=      2.32 (ii)   27.36 (ii)
02222>      Unit Hyd. Tpeak (min)=      2.00       27.00
02223>      Unit Hyd. peak  (cms)=       .51         .08
02224>                                                      *TOTALS*
02225>      PEAK FLOW       (cms)=       .01         .00         .011 (iii)
02226>      TIME TO PEAK    (hrs)=      1.33        1.85        1.333
02227>      RUNOFF VOLUME    (mm)=     22.99        1.41       11.831
02228>      TOTAL RAINFALL   (mm)=     24.99       24.99       24.991
02229>      RUNOFF COEFFICIENT   =       .92         .06         .473
02230>
02231>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02232>            CN* =  49.0    Ia = Dep. Storage  (Above)
02233>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02234>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02235>
02236> ------------------------------------------------------------------------------------------------
02237> R0001:C00077------------------------------------------------------------------------------------
02238> *#-----------------|----------------------EXISTING---------------------------|
02239> -------------------------
02240> | CALIB NASHYD     |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
02241> | 07:102       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
02242> -------------------------   U.H. Tp(hrs)=     .440
02243>
02244>      Unit Hyd Qpeak  (cms)=     .257
02245>
02246>      PEAK FLOW       (cms)=     .009 (i)
02247>      TIME TO PEAK    (hrs)=    2.033
02248>      DURATION        (hrs)=    6.967, (dddd|hh:mm:)=   0|06:58
02249>      AVERAGE FLOW    (cms)=     .002
02250>      RUNOFF VOLUME    (mm)=    1.803
02251>      TOTAL RAINFALL   (mm)=   24.991
02252>      RUNOFF COEFFICIENT   =     .072
02253>
02254>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02255>
02256> ------------------------------------------------------------------------------------------------
02257> R0001:C00078------------------------------------------------------------------------------------
02258> *#-----------------|----------------------PROPOSED---------------------------|
02259> -------------------------
02260> | CALIB STANDHYD   |   Area    (ha)=     .55
02261> | 08:206       DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
02262> -------------------------
02263>                          IMPERVIOUS    PERVIOUS (i)
02264>      Surface Area     (ha)=       .21         .34
02265>      Dep. Storage     (mm)=      2.00        5.00
02266>      Average Slope     (%)=      2.00        2.00
02267>      Length            (m)=    100.00       35.00
02268>      Mannings n            =      .013        .250
02269>
02270>      Max.eff.Inten.(mm/hr)=     76.07        4.99
02271>                   over (min)      2.00       24.00
02272>      Storage Coeff.  (min)=      2.32 (ii)   23.93 (ii)
02273>      Unit Hyd. Tpeak (min)=      2.00       24.00
02274>      Unit Hyd. peak  (cms)=       .60         .05
02275>                                                      *TOTALS*
02276>      PEAK FLOW       (cms)=       .00         .00         .003 (iii)
02277>      TIME TO PEAK    (hrs)=      1.33        1.82        1.817
02278>      RUNOFF VOLUME    (mm)=     22.99        2.54        2.564
02279>      TOTAL RAINFALL   (mm)=     24.99       24.99       24.991
02280>      RUNOFF COEFFICIENT   =       .92         .10         .103
02281>
02282>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02283>            CN* =  49.0    Ia = Dep. Storage  (Above)
02284>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02285>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02286>
02287> ------------------------------------------------------------------------------------------------
02288> R0001:C00079------------------------------------------------------------------------------------
02289> *#**************************************************************************
02290> *#**************************************************************************
02291> *#                          Timmins Storm (Regional)
02292> *#**************************************************************************
02293> *#**************************************************************************
02294> ---------------------
02295> | READ STORM      |  Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SWMHYMO\
02296> | Ptotal= 193.00 mm|  Comments: Timmins Storm Event
02297> ---------------------
02298>       TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
02299>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
02300>       1:00  15.000|  3:00  10.000|  5:00   5.000|  7:00  43.000|  9:00  23.000|  11:00  13.000
02301>       2:00  20.000|  4:00   3.000|  6:00  20.000|  8:00  20.000|  10:00  13.000|  12:00   8.000
02302>
02303> ------------------------------------------------------------------------------------------------
02304> R0001:C00080------------------------------------------------------------------------------------
02305> *#**************************************************************************
02306> *#**************************************************************************
02307> *#-----------------|---------------------------------------------------------|
02308> *#-----------------|----------------------EXISTING---------------------------|
02309> -------------------------
02310> | CALIB NASHYD     |   Area    (ha)=    2.390   Curve Number   (CN)= 60.30
02311> | 01:101       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
02312> -------------------------   U.H. Tp(hrs)=     .410
02313>
02314>      Unit Hyd Qpeak  (cms)=     .223
02315>
02316>      PEAK FLOW       (cms)=     .154 (i)
02317>      TIME TO PEAK    (hrs)=    7.133
02318>      DURATION        (hrs)=   14.783, (dddd|hh:mm:)=   0|14:47
02319>      AVERAGE FLOW    (cms)=     .044
02320>      RUNOFF VOLUME    (mm)=   98.176
02321>      TOTAL RAINFALL   (mm)=  193.000
02322>      RUNOFF COEFFICIENT   =     .509
02323>
02324>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02325>
02326> ------------------------------------------------------------------------------------------------
02327> R0001:C00081------------------------------------------------------------------------------------
02328> *#-----------------|----------------------PROPOSED---------------------------|
02329> -------------------------
02330> | CALIB STANDHYD   |   Area    (ha)=    3.89
02331> | 01:201       DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
02332> -------------------------
02333>                          IMPERVIOUS    PERVIOUS (i)
02334>      Surface Area     (ha)=      1.88        2.01
02335>      Dep. Storage     (mm)=      2.00        5.00
02336>      Average Slope     (%)=      2.00        2.00
02337>      Length            (m)=    100.00       35.00
02338>      Mannings n            =      .013        .250
02339>
02340>      Max.eff.Inten.(mm/hr)=     43.00       36.89
02341>                   over (min)      3.00       13.00
02342>      Storage Coeff.  (min)=      2.91 (ii)   12.62 (ii)
02343>      Unit Hyd. Tpeak (min)=      3.00       13.00
02344>      Unit Hyd. peak  (cms)=       .38         .09
02345>                                                      *TOTALS*
02346>      PEAK FLOW       (cms)=       .12         .20         .317 (iii)
02347>      TIME TO PEAK    (hrs)=      7.00        7.02        7.000
02348>      RUNOFF VOLUME    (mm)=     191.00       95.86       120.885
02349>      TOTAL RAINFALL   (mm)=     193.00      193.00       193.000
02350>      RUNOFF COEFFICIENT   =       .99         .50         .626
02351>
02352>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02353>            CN* =  49.0    Ia = Dep. Storage  (Above)
02354>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02355>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02356>
02357> ------------------------------------------------------------------------------------------------
02358> R0001:C00082------------------------------------------------------------------------------------
02359> *#-----------------|---------------------------------------------------------|
02360> *#-----------------|----------------------POND-------------------------------|
02361> -------------------------
02362> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
02363> |  IN>01:201          |
02364> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
02365>                        ---------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
02366>                                   (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)
02367>                                    .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
02368>                                    .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
02369>                                    .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
02370>
02371>      ROUTING RESULTS              AREA     QPEAK     TPEAK      R.V.
02372>      -----------------------       (ha)     (cms)     (hrs)      (mm)
02373>      INFLOW > 01:201              3.890     .317     7.000    120.885
02374>     OUTFLOW < 02:POND             3.890     .215     7.233    120.883
02375>    OVERFLOW < 03:POND OUT          .000     .000      .000       .000
02376>
02377>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
02378>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
02379>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
02380>
02381>
02382>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=   67.822
02383>                     TIME SHIFT OF PEAK FLOW          (min)=    14.00
02384>                     MAXIMUM  STORAGE   USED        (ha.m.)=.1744E+00
02385>
02386> ------------------------------------------------------------------------------------------------
02387> R0001:C00083------------------------------------------------------------------------------------
02388> *#-----------------|---------------------------------------------------------|
02389> *#-----------------|---------------------------------------------------------|
02390> -------------------------
02391> | CALIB STANDHYD   |   Area    (ha)=     .35
02392> | 04:202       DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
02393> -------------------------
02394>                          IMPERVIOUS    PERVIOUS (i)
02395>      Surface Area     (ha)=       .15         .20
02396>      Dep. Storage     (mm)=      2.00        5.00
02397>      Average Slope     (%)=      2.00        2.00
02398>      Length            (m)=    100.00       35.00
02399>      Mannings n            =      .013        .250
02400>
02401>      Max.eff.Inten.(mm/hr)=     43.00       46.45
02402>                   over (min)      3.00       12.00
02403>      Storage Coeff.  (min)=      2.91 (ii)   11.76 (ii)
02404>      Unit Hyd. Tpeak (min)=      3.00       12.00
02405>      Unit Hyd. peak  (cms)=       .39         .10
02406>                                                      *TOTALS*
02407>      PEAK FLOW       (cms)=       .00         .03         .026 (iii)
02408>      TIME TO PEAK    (hrs)=      6.93        7.02        7.000
02409>      RUNOFF VOLUME    (mm)=     191.00      103.57       106.017
02410>      TOTAL RAINFALL   (mm)=     193.00      193.00       193.000
02411>      RUNOFF COEFFICIENT   =       .99         .54         .549
02412>
02413>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02414>            CN* =  49.0    Ia = Dep. Storage  (Above)
02415>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02416>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02417>
02418> ------------------------------------------------------------------------------------------------
02419> R0001:C00084------------------------------------------------------------------------------------
02420> *#-----------------|---------------------------------------------------------|
02421> -------------------------
02422> | CALIB STANDHYD   |   Area    (ha)=     .17
02423> | 05:203       DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
02424> -------------------------
02425>                          IMPERVIOUS    PERVIOUS (i)
02426>      Surface Area     (ha)=       .07         .10
02427>      Dep. Storage     (mm)=      2.00        5.00
02428>      Average Slope     (%)=      2.00        2.00
02429>      Length            (m)=    100.00       35.00
02430>      Mannings n            =      .013        .250
02431>
02432>      Max.eff.Inten.(mm/hr)=     43.00       46.36
02433>                   over (min)      3.00       12.00
02434>      Storage Coeff.  (min)=      2.91 (ii)   11.77 (ii)
02435>      Unit Hyd. Tpeak (min)=      3.00       12.00
02436>      Unit Hyd. peak  (cms)=       .63         .10
02437>                                                      *TOTALS*
02438>      PEAK FLOW       (cms)=       .00         .01         .013 (iii)
02439>      TIME TO PEAK    (hrs)=      6.78        7.02        7.017
02440>      RUNOFF VOLUME    (mm)=     191.00      103.50       103.590
02441>      TOTAL RAINFALL   (mm)=     193.00      193.00       193.000
02442>      RUNOFF COEFFICIENT   =       .99         .54         .537
02443>
02444>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02445>            CN* =  49.0    Ia = Dep. Storage  (Above)
02446>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02447>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02448>
02449> ------------------------------------------------------------------------------------------------
02450> R0001:C00085------------------------------------------------------------------------------------
02451> -------------------------
02452> | ADD HYD          |
02453> | 06:CULVERT       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
02454> -------------------------                      (ha)     (cms)    (hrs)      (mm)   (cms)
02455>                        ID 1 02:POND          3.890     .215    7.233    120.883    .000
02456>                       +ID 2 03:POND OUT      .000     .000     .000      .000    .000  **DRY**
02457>                       +ID 3 04:202           .350     .026    7.000    106.017    .000
02458>                       +ID 4 05:203           .170     .013    7.017    103.590    .000
02459>                       ========================================================================
02460>                       SUM   06:CULVERT      4.410     .246    7.200    119.037    .000
02461>
02462>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
02463>
02464> ------------------------------------------------------------------------------------------------
```

```
02465> R0001:C00086-------------------------------------------------------------------------------------------------
02466> *#-----------------|-------------------------------------------------------------|
02467> *#-----------------|-------------------------------------------------------------|
02468> *#-----------------|----------------------PROPOSED-------------------------------|
02469> -------------------------
02470> | CALIB STANDHYD         |   Area    (ha)=     .12
02471> | 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
02472> -------------------------
02473>                             IMPERVIOUS    PERVIOUS (i)
02474>      Surface Area     (ha)=       .05          .07
02475>      Dep. Storage     (mm)=      2.00         5.00
02476>      Average Slope     (%)=      2.00         2.00
02477>      Length            (m)=    100.00        35.00
02478>      Mannings n            =      .013         .250
02479>
02480>      Max.eff.Inten.(mm/hr)=     43.00        46.45
02481>                 over (min)=      3.00        12.00
02482>      Storage Coeff.  (min)=      2.91 (ii)   11.76 (ii)
02483>      Unit Hyd. Tpeak (min)=      3.00        12.00
02484>      Unit Hyd. peak  (cms)=       .40          .10
02485>                                                        *TOTALS*
02486>      PEAK FLOW       (cms)=       .00          .01          .009 (iii)
02487>      TIME TO PEAK    (hrs)=      6.90         7.02         7.000
02488>      RUNOFF VOLUME    (mm)=    191.00       103.57       106.891
02489>      TOTAL RAINFALL   (mm)=    193.00       193.00       193.000
02490>      RUNOFF COEFFICIENT   =       .99          .54          .554
02491>
02492>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02493>            CN* =  49.0    Ia = Dep. Storage  (Above)
02494>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02495>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02496>
02497> -------------------------------------------------------------------------------------------------
02498> R0001:C00087-------------------------------------------------------------------------------------------------
02499> *#-----------------|----------------------PROPOSED-------------------------------|
02500> -------------------------
02501> | CALIB STANDHYD         |   Area    (ha)=     .12
02502> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
02503> -------------------------
02504>                             IMPERVIOUS    PERVIOUS (i)
02505>      Surface Area     (ha)=       .06          .06
02506>      Dep. Storage     (mm)=      2.00         5.00
02507>      Average Slope     (%)=      2.00         2.00
02508>      Length            (m)=    100.00        35.00
02509>      Mannings n            =      .013         .250
02510>
02511>      Max.eff.Inten.(mm/hr)=     43.00        21.04
02512>                 over (min)=      3.00        15.00
02513>      Storage Coeff.  (min)=      2.91 (ii)   15.06 (ii)
02514>      Unit Hyd. Tpeak (min)=      3.00        15.00
02515>      Unit Hyd. peak  (cms)=       .38          .08
02516>                                                        *TOTALS*
02517>      PEAK FLOW       (cms)=       .01          .00          .010 (iii)
02518>      TIME TO PEAK    (hrs)=      6.98         7.03         7.000
02519>      RUNOFF VOLUME    (mm)=    191.00        78.13       132.647
02520>      TOTAL RAINFALL   (mm)=    193.00       193.00       193.000
02521>      RUNOFF COEFFICIENT   =       .99          .40          .687
02522>
02523>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02524>            CN* =  49.0    Ia = Dep. Storage  (Above)
02525>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02526>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02527>
02528> -------------------------------------------------------------------------------------------------
02529> R0001:C00088-------------------------------------------------------------------------------------------------
02530> *#-----------------|----------------------EXISTING-------------------------------|
02531> -------------------------
02532> | CALIB NASHYD           |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
02533> | 07:102        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
02534> -------------------------   U.H. Tp(hrs)=     .440
02535>
02536>      Unit Hyd Qpeak  (cms)=     .257
02537>
02538>      PEAK FLOW       (cms)=     .187 (i)
02539>      TIME TO PEAK    (hrs)=    7.167
02540>      DURATION        (hrs)=   14.967, (dddd|hh:mm:)=   0|14:58
02541>      AVERAGE FLOW    (cms)=     .054
02542>      RUNOFF VOLUME    (mm)=   98.176
02543>      TOTAL RAINFALL   (mm)=  193.000
02544>      RUNOFF COEFFICIENT   =     .509
02545>
02546>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02547>
02548> -------------------------------------------------------------------------------------------------
02549> R0001:C00089-------------------------------------------------------------------------------------------------
02550> *#-----------------|----------------------PROPOSED-------------------------------|
02551> -------------------------
02552> | CALIB STANDHYD         |   Area    (ha)=     .55
02553> | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
02554> -------------------------
02555>                             IMPERVIOUS    PERVIOUS (i)
02556>      Surface Area     (ha)=       .21          .34
02557>      Dep. Storage     (mm)=      2.00         5.00
02558>      Average Slope     (%)=      2.00         2.00
02559>      Length            (m)=    100.00        35.00
02560>      Mannings n            =      .013         .250
02561>
02562>      Max.eff.Inten.(mm/hr)=     43.00        43.47
02563>                 over (min)=      3.00        12.00
02564>      Storage Coeff.  (min)=      2.91 (ii)   12.00 (ii)
02565>      Unit Hyd. Tpeak (min)=      3.00        12.00
02566>      Unit Hyd. peak  (cms)=       .53          .09
02567>                                                        *TOTALS*
02568>      PEAK FLOW       (cms)=       .00          .04          .040 (iii)
02569>      TIME TO PEAK    (hrs)=      6.80         7.02         7.017
02570>      RUNOFF VOLUME    (mm)=    191.00       101.32       101.407
02571>      TOTAL RAINFALL   (mm)=    193.00       193.00       193.000
02572>      RUNOFF COEFFICIENT   =       .99          .52          .525
02573>
02574>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02575>            CN* =  49.0    Ia = Dep. Storage  (Above)
02576>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02577>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02578>
02579> -------------------------------------------------------------------------------------------------
02580> R0001:C00090-------------------------------------------------------------------------------------------------
02581> *#-----------------|-------------------------------------------------------------|
02582> *#-----------------|-------------------------------------------------------------|
02583> --------------------
02584> | FINISH           |
02585> --------------------
02586> -------------------------------------------------------------------------------------------------
02587> *************************************************************************************************
02588>      WARNINGS / ERRORS / NOTES
02589>      -------------------------
02590>    Simulation ended on 2021-05-26     at 08:32:16
02591> =================================================================================================
02592>
02593>
```

```
00001> 2     Metric units
00002> *************************************************************************
00003> *#  Project Name: [Union Street - Meaford]    Project Number: [1923-5641]
00004> *#  Date         : 2020-05-19
00005> *#  Modeller     : [EF]
00006> *#  Company      : C.F. Crozier & Associates Inc.
00007> *#  License #    :  3737016
00008> *************************************************************************
00009> START               TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00010> *%                    [  ] <--storm filename, one per line for NSTORM time
00011> *%--------------------|------------------------------------------------------|
00012> *#--------------------|------------------------------------------------------|
00013> *#--------------------|------------------------------------------------------|
00014> *%--------------------|------------------------------------------------------|
00015> *************************************************************************
00016> *#                          100-YEAR, 4 HOUR CHICAGO STORM
00017> *************************************************************************
00018> *#--------------------|------------------------------------------------------|
00019> MASS STORM           PTOTAL=[108.0](mm), CSDT=[1](min),
00020>                      CURVE_FILENAME=["SCS24HII.mst"]
00021> *#--------------------|------------------------------------------------------|
00022> *#--------------------|----------EXISTING----------------------------------|
00023> CALIB NASHYD         ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00024>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00025>                      N=[3], TP=[0.41]hrs,
00026>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00027> *#--------------------|----------PROPOSED----------------------------------|
00028> CALIB STANDHYD       ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00029>                      XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00030>                      SCS curve number CN=[49],
00031>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00032>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00033>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00034>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00035>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00036> *#--------------------|------------------------------------------------------|
00037> *#--------------------|----------POND--------------------------------------|
00038> ROUTE RESERVOIR      IDout=[2],   NHYD=["POND"],  IDin=[1],
00039>                      RDT=[1](min),
00040>                           TABLE of ( OUTFLOW-STORAGE ) values
00041>                                     (cms) - (ha-m)
00042>                                   [   0.0 , 0.0 ]
00043>                                   [ 0.009 , 0.015]
00044>                                   [ 0.013 , 0.033]
00045>                                   [ 0.017 , 0.059]
00046>                                   [ 0.019 , 0.092]
00047>                                   [ 0.022 , 0.128]
00048>                                   [ 0.098 , 0.166]
00049>                                   [ 0.667 , 0.207]
00050>                                   [ 1.958 , 0.251]
00051>                                   [  -1  , -1   ]  (max twenty pts)
00052>                           IDovf=[3], NHYDovf=["POND OUT"]
00053> *#--------------------|------------------------------------------------------|
00054> *#--------------------|------------------------------------------------------|
00055> CALIB STANDHYD       ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00056>                      XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00057>                      SCS curve number CN=[49],
00058>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00059>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00060>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00061>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00062>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00063> *#--------------------|------------------------------------------------------|
00064> CALIB STANDHYD       ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00065>                      XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00066>                      SCS curve number CN=[49],
00067>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00068>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00069>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00070>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00071>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00072> *%--------------------|------------------------------------------------------|
00073> ADD HYD              IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00074> *#--------------------|------------------------------------------------------|
00075> *#--------------------|------------------------------------------------------|
00076> *#--------------------|----------PROPOSED----------------------------------|
00077> CALIB STANDHYD       ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00078>                      XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00079>                      SCS curve number CN=[49],
00080>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00081>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00082>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00083>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00084>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00085> *#--------------------|------------------------------------------------------|
00086> CALIB STANDHYD       ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00087>                      XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00088>                      SCS curve number CN=[49],
00089>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00090>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00091>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00092>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00093>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00094> *#--------------------|----------EXISTING----------------------------------|
00095> CALIB NASHYD         ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00096>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00097>                      N=[3], TP=[0.44]hrs,
00098>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00099> *#--------------------|----------PROPOSED----------------------------------|
00100> CALIB STANDHYD       ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00101>                      XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00102>                      SCS curve number CN=[49],
00103>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00104>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00105>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00106>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00107>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00108> *%--------------------|------------------------------------------------------|
00109> *************************************************************************
00110> *#                          50-YEAR, 4 HOUR CHICAGO STORM
00111> *************************************************************************
00112> *#--------------------|------------------------------------------------------|
00113> MASS STORM           PTOTAL=[96.0](mm), CSDT=[1](min),
00114>                      CURVE_FILENAME=["SCS24HII.mst"]
00115> *#--------------------|------------------------------------------------------|
00116> *#--------------------|----------EXISTING----------------------------------|
00117> CALIB NASHYD         ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00118>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00119>                      N=[3], TP=[0.41]hrs,
00120>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00121> *#--------------------|----------PROPOSED----------------------------------|
00122> CALIB STANDHYD       ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00123>                      XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00124>                      SCS curve number CN=[49],
00125>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00126>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00127>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00128>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00129>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00130> *#--------------------|------------------------------------------------------|
00131> *#--------------------|----------POND--------------------------------------|
00132> ROUTE RESERVOIR      IDout=[2],   NHYD=["POND"],  IDin=[1],
00133>                      RDT=[1](min),
00134>                           TABLE of ( OUTFLOW-STORAGE ) values
00135>                                     (cms) - (ha-m)
00136>                                   [   0.0 , 0.0 ]
00137>                                   [ 0.009 , 0.015]
00138>                                   [ 0.013 , 0.033]
00139>                                   [ 0.017 , 0.059]
00140>                                   [ 0.019 , 0.092]
00141>                                   [ 0.022 , 0.128]
00142>                                   [ 0.098 , 0.166]
00143>                                   [ 0.667 , 0.207]
00144>                                   [ 1.958 , 0.251]
00145>                                   [  -1  , -1   ]  (max twenty pts)
00146>                           IDovf=[3], NHYDovf=["POND OUT"]
00147> *#--------------------|------------------------------------------------------|
00148> *#--------------------|------------------------------------------------------|
00149> CALIB STANDHYD       ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00150>                      XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00151>                      SCS curve number CN=[49],
00152>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00153>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00154>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00155>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00156>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00157> *#--------------------|------------------------------------------------------|
00158> CALIB STANDHYD       ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00159>                      XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00160>                      SCS curve number CN=[49],
00161>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00162>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00163>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00164>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00165>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00166> *%--------------------|------------------------------------------------------|
00167> ADD HYD              IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00168> *#--------------------|------------------------------------------------------|
00169> *#--------------------|------------------------------------------------------|
00170> *#--------------------|----------PROPOSED----------------------------------|
00171> CALIB STANDHYD       ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00172>                      XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00173>                      SCS curve number CN=[49],
00174>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00175>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00176>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00177>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00178>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00179> *#--------------------|----------PROPOSED----------------------------------|
00180> CALIB STANDHYD       ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00181>                      XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00182>                      SCS curve number CN=[49],
00183>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00184>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00185>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00186>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00187>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00188> *#--------------------|----------EXISTING----------------------------------|
00189> CALIB NASHYD         ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00190>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00191>                      N=[3], TP=[0.44]hrs,
00192>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00193> *#--------------------|----------PROPOSED----------------------------------|
00194> CALIB STANDHYD       ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00195>                      XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00196>                      SCS curve number CN=[49],
00197>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00198>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00199>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00200>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00201>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00202> *%--------------------|------------------------------------------------------|
00203> *************************************************************************
00204> *#                          25-YEAR, 4 HOUR CHICAGO STORM
00205> *************************************************************************
00206> *#--------------------|------------------------------------------------------|
00207> MASS STORM           PTOTAL=[86.4](mm), CSDT=[1](min),
00208>                      CURVE_FILENAME=["SCS24HII.mst"]
00209> *#--------------------|------------------------------------------------------|
00210> *#--------------------|----------EXISTING----------------------------------|
00211> CALIB NASHYD         ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00212>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00213>                      N=[3], TP=[0.41]hrs,
00214>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00215> *#--------------------|----------PROPOSED----------------------------------|
00216> CALIB STANDHYD       ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00217>                      XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00218>                      SCS curve number CN=[49],
00219>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00220>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00221>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00222>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00223>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00224> *#--------------------|------------------------------------------------------|
00225> *#--------------------|----------POND--------------------------------------|
00226> ROUTE RESERVOIR      IDout=[2],   NHYD=["POND"],  IDin=[1],
00227>                      RDT=[1](min),
00228>                           TABLE of ( OUTFLOW-STORAGE ) values
00229>                                     (cms) - (ha-m)
00230>                                   [   0.0 , 0.0 ]
00231>                                   [ 0.009 , 0.015]
00232>                                   [ 0.013 , 0.033]
00233>                                   [ 0.017 , 0.059]
00234>                                   [ 0.019 , 0.092]
00235>                                   [ 0.022 , 0.128]
00236>                                   [ 0.098 , 0.166]
00237>                                   [ 0.667 , 0.207]
00238>                                   [ 1.958 , 0.251]
00239>                                   [  -1  , -1   ]  (max twenty pts)
00240>                           IDovf=[3], NHYDovf=["POND OUT"]
00241> *#--------------------|------------------------------------------------------|
00242> *#--------------------|------------------------------------------------------|
00243> CALIB STANDHYD       ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00244>                      XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00245>                      SCS curve number CN=[49],
00246>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00247>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00248>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00249>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00250>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00251> *#--------------------|------------------------------------------------------|
00252> CALIB STANDHYD       ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00253>                      XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00254>                      SCS curve number CN=[49],
00255>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00256>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00257>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00258>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00259>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00260> *%--------------------|------------------------------------------------------|
00261> ADD HYD              IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00262> *#--------------------|------------------------------------------------------|
00263> *#--------------------|------------------------------------------------------|
00264> *#--------------------|----------PROPOSED----------------------------------|
00265> CALIB STANDHYD       ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00266>                      XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00267>                      SCS curve number CN=[49],
00268>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00269>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00270>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00271>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00272>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00273> *#--------------------|----------PROPOSED----------------------------------|
00274> CALIB STANDHYD       ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00275>                      XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00276>                      SCS curve number CN=[49],
00277>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00278>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00279>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00280>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00281>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00282> *#--------------------|----------EXISTING----------------------------------|
00283> CALIB NASHYD         ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00284>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00285>                      N=[3], TP=[0.44]hrs,
00286>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00287> *#--------------------|----------PROPOSED----------------------------------|
00288> CALIB STANDHYD       ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00289>                      XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00290>                      SCS curve number CN=[49],
00291>                      Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00292>                                           LGP=[35](m), MNP=[0.25], SCP=[0](min),
00293>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00294>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00295>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00296> *%--------------------|------------------------------------------------------|
00297> *************************************************************************
00298> *#                          10-YEAR, 4 HOUR CHICAGO STORM
00299> *************************************************************************
00300> *#--------------------|------------------------------------------------------|
00301> MASS STORM           PTOTAL=[72.0](mm), CSDT=[1](min),
00302>                      CURVE_FILENAME=["SCS24HII.mst"]
00303> *#--------------------|------------------------------------------------------|
00304> *#--------------------|----------EXISTING----------------------------------|
00305> CALIB NASHYD         ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00306>                      DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00307>                      N=[3], TP=[0.41]hrs,
00308>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
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00309> *#-----------------|---------------------PROPOSED----------------------------------|
00310> CALIB STANDHYD     ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00311>                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00312>                    SCS curve number CN=[49],
00313>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00314>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00315>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00316>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00317>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00318> *#-----------------|----------------------------------------------------------------|
00319> *#-----------------|---------------------POND-------------------------------------|
00320> ROUTE RESERVOIR    IDout=[2],   NHYD=["POND"],  IDin=[1],
00321>                    RDT=[1](min),
00322>                          TABLE of ( OUTFLOW-STORAGE ) values
00323>                                     (cms) - (ha-m)
00324>                                   [   0.0 , 0.0 ]
00325>                                   [ 0.009 , 0.015]
00326>                                   [ 0.013 , 0.033]
00327>                                   [ 0.017 , 0.059]
00328>                                   [ 0.019 , 0.092]
00329>                                   [ 0.022 , 0.128]
00330>                                   [ 0.098 , 0.166]
00331>                                   [ 0.667 , 0.207]
00332>                                   [ 1.958 , 0.251]
00333>                                   [  -1  , -1    ]  (max twenty pts)
00334>                    IDovf=[3], NHYDovf=["POND OUT"]
00335> *#-----------------|----------------------------------------------------------------|
00336> *#-----------------|----------------------------------------------------------------|
00337> CALIB STANDHYD     ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00338>                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00339>                    SCS curve number CN=[49],
00340>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00341>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00342>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00343>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00344>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00345> *#-----------------|----------------------------------------------------------------|
00346> CALIB STANDHYD     ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00347>                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00348>                    SCS curve number CN=[49],
00349>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00350>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00351>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00352>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00353>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00354> *%-----------------|----------------------------------------------------------------|
00355> ADD HYD            IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00356> *#-----------------|----------------------------------------------------------------|
00357> *#-----------------|----------------------------------------------------------------|
00358> *#-----------------|---------------------PROPOSED---------------------------------|
00359> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00360>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00361>                    SCS curve number CN=[49],
00362>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00363>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00364>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00365>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00366>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00367> *#-----------------|---------------------PROPOSED---------------------------------|
00368> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00369>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00370>                    SCS curve number CN=[49],
00371>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00372>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00373>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00374>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00375>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00376> *#-----------------|---------------------EXISTING---------------------------------|
00377> CALIB NASHYD      ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00378>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00379>                    N=[3], TP=[0.44]hrs,
00380>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00381> *#-----------------|---------------------PROPOSED---------------------------------|
00382> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00383>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00384>                    SCS curve number CN=[49],
00385>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00386>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00387>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00388>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00389>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00390> *%-----------------|----------------------------------------------------------------|
00391> *#*****************|****************************************************************
00392> *#                          5-YEAR, 4 HOUR CHICAGO STORM
00393> *#*****************|****************************************************************
00394> *#-----------------|----------------------------------------------------------------|
00395> MASS STORM         PTOTAL=[62.4](mm), CSDT=[1](min),
00396>                    CURVE_FILENAME=["SCS24HII.mst"]
00397> *#-----------------|----------------------------------------------------------------|
00398> *#-----------------|---------------------EXISTING---------------------------------|
00399> CALIB NASHYD      ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00400>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00401>                    N=[3], TP=[0.41]hrs,
00402>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00403> *#-----------------|---------------------PROPOSED---------------------------------|
00404> CALIB STANDHYD     ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00405>                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00406>                    SCS curve number CN=[49],
00407>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00408>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00409>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00410>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00411>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00412> *#-----------------|----------------------------------------------------------------|
00413> *#-----------------|---------------------POND-------------------------------------|
00414> ROUTE RESERVOIR    IDout=[2],   NHYD=["POND"],  IDin=[1],
00415>                    RDT=[1](min),
00416>                          TABLE of ( OUTFLOW-STORAGE ) values
00417>                                     (cms) - (ha-m)
00418>                                   [   0.0 , 0.0 ]
00419>                                   [ 0.009 , 0.015]
00420>                                   [ 0.013 , 0.033]
00421>                                   [ 0.017 , 0.059]
00422>                                   [ 0.019 , 0.092]
00423>                                   [ 0.022 , 0.128]
00424>                                   [ 0.098 , 0.166]
00425>                                   [ 0.667 , 0.207]
00426>                                   [ 1.958 , 0.251]
00427>                                   [  -1  , -1    ]  (max twenty pts)
00428>                    IDovf=[3], NHYDovf=["POND OUT"]
00429> *#-----------------|----------------------------------------------------------------|
00430> *#-----------------|----------------------------------------------------------------|
00431> CALIB STANDHYD     ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00432>                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00433>                    SCS curve number CN=[49],
00434>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00435>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00436>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00437>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00438>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00439> *#-----------------|----------------------------------------------------------------|
00440> CALIB STANDHYD     ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00441>                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00442>                    SCS curve number CN=[49],
00443>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00444>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00445>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00446>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00447>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00448> *%-----------------|----------------------------------------------------------------|
00449> ADD HYD            IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00450> *#-----------------|----------------------------------------------------------------|
00451> *#-----------------|----------------------------------------------------------------|
00452> *#-----------------|---------------------PROPOSED---------------------------------|
00453> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00454>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00455>                    SCS curve number CN=[49],
00456>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00457>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00458>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00459>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00460>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00461> *#-----------------|---------------------PROPOSED---------------------------------|
00462> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00463>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00464>                    SCS curve number CN=[49],
00465>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00466>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00467>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00468>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00469>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00470> *#-----------------|---------------------EXISTING---------------------------------|
00471> CALIB NASHYD      ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00472>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00473>                    N=[3], TP=[0.44]hrs,
00474>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00475> *#-----------------|---------------------PROPOSED---------------------------------|
00476> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00477>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00478>                    SCS curve number CN=[49],
00479>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00480>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00481>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00482>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00483>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00484> *%-----------------|----------------------------------------------------------------|
00485> *#*****************|****************************************************************
00486> *#                          2 YEAR, 4 HOUR CHICAGO STORM
00487> *#*****************|****************************************************************
00488> *#-----------------|----------------------------------------------------------------|
00489> MASS STORM         PTOTAL=[45.60](mm), CSDT=[1](min),
00490>                    CURVE_FILENAME=["SCS24HII.mst"]
00491> *#-----------------|----------------------------------------------------------------|
00492> *#-----------------|---------------------EXISTING---------------------------------|
00493> CALIB NASHYD      ID=[1], NHYD=["101"], DT=[1]min, AREA=[2.39](ha),
00494>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00495>                    N=[3], TP=[0.41]hrs,
00496>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00497> *#-----------------|---------------------PROPOSED---------------------------------|
00498> CALIB STANDHYD     ID=[1], NHYD=["201"], DT=[1](min), AREA=[3.89](ha),
00499>                    XIMP=[0.263], TIMP=[0.484], DWF=[0](cms), LOSS=[2],
00500>                    SCS curve number CN=[49],
00501>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00502>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00503>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00504>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00505>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00506> *#-----------------|----------------------------------------------------------------|
00507> *#-----------------|---------------------POND-------------------------------------|
00508> ROUTE RESERVOIR    IDout=[2],   NHYD=["POND"],  IDin=[1],
00509>                    RDT=[1](min),
00510>                          TABLE of ( OUTFLOW-STORAGE ) values
00511>                                     (cms) - (ha-m)
00512>                                   [   0.0 , 0.0 ]
00513>                                   [ 0.009 , 0.015]
00514>                                   [ 0.013 , 0.033]
00515>                                   [ 0.017 , 0.059]
00516>                                   [ 0.019 , 0.092]
00517>                                   [ 0.022 , 0.128]
00518>                                   [ 0.098 , 0.166]
00519>                                   [ 0.667 , 0.207]
00520>                                   [ 1.958 , 0.251]
00521>                                   [  -1  , -1    ]  (max twenty pts)
00522>                    IDovf=[3], NHYDovf=["POND OUT"]
00523> *#-----------------|----------------------------------------------------------------|
00524> *#-----------------|----------------------------------------------------------------|
00525> CALIB STANDHYD     ID=[4], NHYD=["202"], DT=[1](min), AREA=[0.35](ha),
00526>                    XIMP=[0.028], TIMP=[0.417], DWF=[0](cms), LOSS=[2],
00527>                    SCS curve number CN=[49],
00528>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00529>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00530>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00531>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00532>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00533> *#-----------------|----------------------------------------------------------------|
00534> CALIB STANDHYD     ID=[5], NHYD=["203"], DT=[1](min), AREA=[0.17](ha),
00535>                    XIMP=[0.001], TIMP=[0.400], DWF=[0](cms), LOSS=[2],
00536>                    SCS curve number CN=[49],
00537>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00538>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00539>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00540>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00541>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00542> *%-----------------|----------------------------------------------------------------|
00543> ADD HYD            IDsum=[6], NHYD=["CULVERT"], IDs to add=[2,3,4,5]
00544> *#-----------------|----------------------------------------------------------------|
00545> *#-----------------|----------------------------------------------------------------|
00546> *#-----------------|---------------------PROPOSED---------------------------------|
00547> CALIB STANDHYD     ID=[9], NHYD=["204"], DT=[1](min), AREA=[0.12](ha),
00548>                    XIMP=[0.038], TIMP=[0.423], DWF=[0](cms), LOSS=[2],
00549>                    SCS curve number CN=[49],
00550>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00551>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00552>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00553>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00554>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00555> *#-----------------|---------------------PROPOSED---------------------------------|
00556> CALIB STANDHYD     ID=[10], NHYD=["205"], DT=[1](min), AREA=[0.12](ha),
00557>                    XIMP=[0.483], TIMP=[0.483], DWF=[0](cms), LOSS=[2],
00558>                    SCS curve number CN=[49],
00559>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00560>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00561>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00562>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00563>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00564> *#-----------------|---------------------EXISTING---------------------------------|
00565> CALIB NASHYD      ID=[7], NHYD=["102"], DT=[1]min, AREA=[2.96](ha),
00566>                    DWF=[0](cms),  CN/C=[60.3], IA=[6.7](mm),
00567>                    N=[3], TP=[0.44]hrs,
00568>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00569> *#-----------------|---------------------PROPOSED---------------------------------|
00570> CALIB STANDHYD     ID=[8], NHYD=["206"], DT=[1](min), AREA=[0.55](ha),
00571>                    XIMP=[0.001], TIMP=[0.373], DWF=[0](cms), LOSS=[2],
00572>                    SCS curve number CN=[49],
00573>                    Pervious   surfaces: IAper=[5.0](mm), SLPP=[2.0](%),
00574>                                         LGP=[35](m), MNP=[0.25], SCP=[0](min),
00575>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[2.0](%),
00576>                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
00577>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00578> *#-----------------|----------------------------------------------------------------|
00579> *#*****************|****************************************************************
00580>
00581> FINISH
00582>
```

```
00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004> S       W   W   MM MM   H   H    Y Y    MM MM   O   O          2   2   0   0  1 1      7    7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2   2   0   0    1      7     7 Ver4.05.0
00006>     S   W W W   M   M   H   H     Y     M   M   O   O        222   0   0   0    1      7      7  APR 2017
00007> SSSSS   W W W   M   M   H   H     Y     M   M    OOO         2     0   0   0    1      7      7  =========
00008>                                                              2     0   0   0    1      7      7  # 3737016
00009>         StormWater Management HYdrologic Model                222     000    11     7      7  =========
00010>
00011> ********************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ***********************
00013> ****************  A single event and continuous hydrologic simulation model  ****
00014> ****************     based on the principles of HYMO and its successors      ****
00015> ****************                OTTHYMO-83 and OTTHYMO-89.                    ****
00016> ********************************************************************************
00017> ****************  Distributed by:  J.F. Sabourin and Associates Inc.           ****
00018> ****************                  Ottawa, Ontario: (613) 836-3884              ****
00019> ****************                  Gatineau, Quebec: (819) 243-6858             ****
00020> ****************                  E-Mail: swmhymo@jfsa.com                     ****
00021> ********************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00025> ++++++++++++++++++                Collingwood          SERIAL#:3737016     ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ********************************************************************************
00029> ****************                +++++++ PROGRAM ARRAY DIMENSIONS +++++++      ****************
00030> ****************                Maximum value for ID numbers  :    11        ****************
00031> ****************                Max. number of rainfall points: 105408       ****************
00032> ****************                Max. number of flow points    : 105408       ****************
00033> ********************************************************************************
00034>
00035> ********************************************************************************
00036> ************************************  SWMHYMO Ver4.05.0  ***********************
00037> ****************  A single event and continuous hydrologic simulation model  ****
00038> ****************     based on the principles of HYMO and its successors      ****
00039> ****************                OTTHYMO-83 and OTTHYMO-89.                    ****
00040> ********************************************************************************
00041> ****************  Distributed by:  J.F. Sabourin and Associates Inc.           ****
00042> ****************                  Ottawa, Ontario: (613) 836-3884              ****
00043> ****************                  Gatineau, Quebec: (819) 243-6858             ****
00044> ****************                  E-Mail: swmhymo@jfsa.com                     ****
00045> ********************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00049> ++++++++++++++++++                Collingwood          SERIAL#:3737016     ++++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ********************************************************************************
00053> ****************                +++++++ PROGRAM ARRAY DIMENSIONS +++++++      ****************
00054> ****************                Maximum value for ID numbers  :    11        ****************
00055> ****************                Max. number of rainfall points: 105408       ****************
00056> ****************                Max. number of flow points    : 105408       ****************
00057> ********************************************************************************
00058>
00059>
00060> ****************************  D E T A I L E D   O U T P U T  ***********************
00061> ********************************************************************************
00062> *                  RUN DATE: 2021-05-26    TIME: 08:54:02     RUN COUNTER: 000010     *
00063> ********************************************************************************
00064> * Input   file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS CHECK HYMO\2020.0*
00065> *              5.25 MODEL.dat                                                    *
00066> * Output  file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS CHECK HYMO\2020.0*
00067> *              5.25 MODEL.out                                                    *
00068> * Summary file: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS CHECK HYMO\2020.0*
00069> *              5.25 MODEL.sum                                                    *
00070> * User comments:                                                                *
00071> * 1:_____________________________________________________________________________*
00072> * 2:_____________________________________________________________________________*
00073> * 3:_____________________________________________________________________________*
00074> ********************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001-------------------------------------------------------------------------
00078> *#*****************************************************************************
00079> *#  Project Name: [Union Street - Meaford]    Project Number: [1923-5641]
00080> *#  Date        : 2020-05-19
00081> *#  Modeller    : [EF]
00082> *#  Company     : C.F. Crozier & Associates Inc.
00083> *#  License #   :  3737016
00084> *#*****************************************************************************
00085>  --------------------
00086> | START           | Project  dir.:C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS
00087>  ----------------- Rainfall dir.:C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS
00088>     TZERO =    .00 hrs on      0
00089>     METOUT=   2 (output = METRIC)
00090>     NRUN  = 0001
00091>     NSTORM=   0
00092> --------------------------------------------------------------------------------
00093> R0001:C00002-------|-----------------------------------------------------------------
00094> *#*****************|*****************************************************************
00095> *#-----------------|-----------------------------------------------------------------|
00096> *#*****************|*****************************************************************
00097> *#                              100-YEAR, 4 HOUR CHICAGO STORM
00098> *#*****************|*****************************************************************
00099> *#-----------------|-----------------------------------------------------------------|
00100>  --------------------
00101> | MASS STORM      |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
00102> | Ptotal=108.00 mm |    Comments: 24 hour SCS II storm mass curve
00103>  --------------------
00104>                           Duration of storm       =   24.00 hrs
00105>                           Mass curve time step    =   12.00 min
00106>                           Selected storm time step =    1.00 min
00107>                           Volume of derived storm  =  108.00 mm
00108>
00109>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00110>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00111>       0:01    .000|   4:01  1.080|   8:01  2.160|  12:01 121.500|  16:01  2.700|  20:01  2.160
00112>       0:02    .000|   4:02  1.080|   8:02  2.160|  12:02 121.500|  16:02  2.700|  20:02  2.160
00113>       0:03    .000|   4:03  1.080|   8:03  2.160|  12:03 121.500|  16:03  2.700|  20:03  2.160
00114>       0:04    .000|   4:04  1.080|   8:04  2.160|  12:04 121.500|  16:04  2.700|  20:04  2.160
00115>       0:05    .000|   4:05  1.080|   8:05  2.160|  12:05 121.500|  16:05  2.700|  20:05  2.160
00116>       0:06    .000|   4:06  1.080|   8:06  2.160|  12:06 121.500|  16:06  2.700|  20:06  2.160
00117>       0:07    .000|   4:07  1.080|   8:07  2.160|  12:07 121.500|  16:07  2.700|  20:07  2.160
00118>       0:08    .000|   4:08  1.080|   8:08  2.160|  12:08 121.500|  16:08  2.700|  20:08  2.160
00119>       0:09    .000|   4:09  1.080|   8:09  2.160|  12:09 121.500|  16:09  2.700|  20:09  2.160
00120>       0:10    .000|   4:10  1.080|   8:10  2.160|  12:10 121.500|  16:10  2.700|  20:10  2.160
00121>       0:11    .000|   4:11  1.080|   8:11  2.160|  12:11 121.500|  16:11  2.700|  20:11  2.160
00122>       0:12    .000|   4:12  1.080|   8:12  2.160|  12:12 121.500|  16:12  2.700|  20:12  2.160
00123>       0:13   1.080|   4:13  2.160|   8:13  3.240|  12:13  21.600|  16:13  2.700|  20:13  1.620
00124>       0:14   1.080|   4:14  2.160|   8:14  3.240|  12:14  21.600|  16:14  2.700|  20:14  1.620
00125>       0:15   1.080|   4:15  2.160|   8:15  3.240|  12:15  21.600|  16:15  2.700|  20:15  1.620
00126>       0:16   1.080|   4:16  2.160|   8:16  3.240|  12:16  21.600|  16:16  2.700|  20:16  1.620
00127>       0:17   1.080|   4:17  2.160|   8:17  3.240|  12:17  21.600|  16:17  2.700|  20:17  1.620
00128>       0:18   1.080|   4:18  2.160|   8:18  3.240|  12:18  21.600|  16:18  2.700|  20:18  1.620
00129>       0:19   1.080|   4:19  2.160|   8:19  3.240|  12:19  21.600|  16:19  2.700|  20:19  1.620
00130>       0:20   1.080|   4:20  2.160|   8:20  3.240|  12:20  21.600|  16:20  2.700|  20:20  1.620
00131>       0:21   1.080|   4:21  2.160|   8:21  3.240|  12:21  21.600|  16:21  2.700|  20:21  1.620
00132>       0:22   1.080|   4:22  2.160|   8:22  3.240|  12:22  21.600|  16:22  2.700|  20:22  1.620
00133>       0:23   1.080|   4:23  2.160|   8:23  3.240|  12:23  21.600|  16:23  2.700|  20:23  1.620
00134>       0:24   1.080|   4:24  2.160|   8:24  3.240|  12:24  21.600|  16:24  2.700|  20:24  1.620
00135>       0:25   1.080|   4:25  2.160|   8:25  3.240|  12:25  13.500|  16:25  2.700|  20:25  1.620
00136>       0:26   1.080|   4:26  2.160|   8:26  3.240|  12:26  13.500|  16:26  2.700|  20:26  1.620
00137>       0:27   1.080|   4:27  2.160|   8:27  3.240|  12:27  13.500|  16:27  2.700|  20:27  1.620
00138>       0:28   1.080|   4:28  2.160|   8:28  3.240|  12:28  13.500|  16:28  2.700|  20:28  1.620
00139>       0:29   1.080|   4:29  2.160|   8:29  3.240|  12:29  13.500|  16:29  2.700|  20:29  1.620
00140>       0:30   1.080|   4:30  2.160|   8:30  3.240|  12:30  13.500|  16:30  2.700|  20:30  1.620
00141>       0:31   1.080|   4:31  2.160|   8:31  3.240|  12:31  13.500|  16:31  2.700|  20:31  1.620
00142>       0:32   1.080|   4:32  2.160|   8:32  3.240|  12:32  13.500|  16:32  2.700|  20:32  1.620
00143>       0:33   1.080|   4:33  2.160|   8:33  3.240|  12:33  13.500|  16:33  2.700|  20:33  1.620
00144>       0:34   1.080|   4:34  2.160|   8:34  3.240|  12:34  13.500|  16:34  2.700|  20:34  1.620
00145>       0:35   1.080|   4:35  2.160|   8:35  3.240|  12:35  13.500|  16:35  2.700|  20:35  1.620
00146>       0:36   1.080|   4:36  2.160|   8:36  3.240|  12:36  13.500|  16:36  2.700|  20:36  1.620
00147>       0:37   1.080|   4:37  2.160|   8:37  3.240|  12:37   9.720|  16:37  2.700|  20:37  1.080
00148>       0:38   1.080|   4:38  2.160|   8:38  3.240|  12:38   9.720|  16:38  2.700|  20:38  1.080
00149>       0:39   1.080|   4:39  2.160|   8:39  3.240|  12:39   9.720|  16:39  2.700|  20:39  1.080
00150>       0:40   1.080|   4:40  2.160|   8:40  3.240|  12:40   9.720|  16:40  2.700|  20:40  1.080
00151>       0:41   1.080|   4:41  2.160|   8:41  3.240|  12:41   9.720|  16:41  2.700|  20:41  1.080
00152>       0:42   1.080|   4:42  2.160|   8:42  3.240|  12:42   9.720|  16:42  2.700|  20:42  1.080
00153>       0:43   1.080|   4:43  2.160|   8:43  3.240|  12:43   9.720|  16:43  2.700|  20:43  1.080
00154>       0:44   1.080|   4:44  2.160|   8:44  3.240|  12:44   9.720|  16:44  2.700|  20:44  1.080
00155>       0:45   1.080|   4:45  2.160|   8:45  3.240|  12:45   9.720|  16:45  2.700|  20:45  1.080
00156>       0:46   1.080|   4:46  2.160|   8:46  3.240|  12:46   9.720|  16:46  2.700|  20:46  1.080
00157>       0:47   1.080|   4:47  2.160|   8:47  3.240|  12:47   9.720|  16:47  2.700|  20:47  1.080
00158>       0:48   1.080|   4:48  2.160|   8:48  3.240|  12:48   9.720|  16:48  2.700|  20:48  1.080
00159>       0:49   1.080|   4:49  2.160|   8:49  3.240|  12:49   9.180|  16:49  2.700|  20:49  1.620
00160>       0:50   1.080|   4:50  2.160|   8:50  3.240|  12:50   9.180|  16:50  2.700|  20:50  1.620
00161>       0:51   1.080|   4:51  2.160|   8:51  3.240|  12:51   9.180|  16:51  2.700|  20:51  1.620
00162>       0:52   1.080|   4:52  2.160|   8:52  3.240|  12:52   9.180|  16:52  2.700|  20:52  1.620
00163>       0:53   1.080|   4:53  2.160|   8:53  3.240|  12:53   9.180|  16:53  2.700|  20:53  1.620
00164>       0:54   1.080|   4:54  2.160|   8:54  3.240|  12:54   9.180|  16:54  2.700|  20:54  1.620
00165>       0:55   1.080|   4:55  2.160|   8:55  3.240|  12:55   9.180|  16:55  2.700|  20:55  1.620
00166>       0:56   1.080|   4:56  2.160|   8:56  3.240|  12:56   9.180|  16:56  2.700|  20:56  1.620
00167>       0:57   1.080|   4:57  2.160|   8:57  3.240|  12:57   9.180|  16:57  2.700|  20:57  1.620
00168>       0:58   1.080|   4:58  2.160|   8:58  3.240|  12:58   9.180|  16:58  2.700|  20:58  1.620
00169>       0:59   1.080|   4:59  2.160|   8:59  3.240|  12:59   9.180|  16:59  2.700|  20:59  1.620
00170>       1:00   1.080|   5:00  2.160|   9:00  3.240|  13:00   9.180|  17:00  2.700|  21:00  1.620
00171>       1:01   1.080|   5:01  2.160|   9:01  3.240|  13:01   6.480|  17:01  1.620|  21:01  1.620
00172>       1:02   1.080|   5:02  2.160|   9:02  3.240|  13:02   6.480|  17:02  1.620|  21:02  1.620
00173>       1:03   1.080|   5:03  2.160|   9:03  3.240|  13:03   6.480|  17:03  1.620|  21:03  1.620
00174>       1:04   1.080|   5:04  2.160|   9:04  3.240|  13:04   6.480|  17:04  1.620|  21:04  1.620
00175>       1:05   1.080|   5:05  2.160|   9:05  3.240|  13:05   6.480|  17:05  1.620|  21:05  1.620
00176>       1:06   1.080|   5:06  2.160|   9:06  3.240|  13:06   6.480|  17:06  1.620|  21:06  1.620
00177>       1:07   1.080|   5:07  2.160|   9:07  3.240|  13:07   6.480|  17:07  1.620|  21:07  1.620
00178>       1:08   1.080|   5:08  2.160|   9:08  3.240|  13:08   6.480|  17:08  1.620|  21:08  1.620
00179>       1:09   1.080|   5:09  2.160|   9:09  3.240|  13:09   6.480|  17:09  1.620|  21:09  1.620
00180>       1:10   1.080|   5:10  2.160|   9:10  3.240|  13:10   6.480|  17:10  1.620|  21:10  1.620
00181>       1:11   1.080|   5:11  2.160|   9:11  3.240|  13:11   6.480|  17:11  1.620|  21:11  1.620
00182>       1:12   1.080|   5:12  2.160|   9:12  3.240|  13:12   6.480|  17:12  1.620|  21:12  1.620
00183>       1:13   1.080|   5:13  2.160|   9:13  3.240|  13:13   5.400|  17:13  1.620|  21:13  1.080
00184>       1:14   1.080|   5:14  2.160|   9:14  3.240|  13:14   5.400|  17:14  1.620|  21:14  1.080
00185>       1:15   1.080|   5:15  2.160|   9:15  3.240|  13:15   5.400|  17:15  1.620|  21:15  1.080
00186>       1:16   1.080|   5:16  2.160|   9:16  3.240|  13:16   5.400|  17:16  1.620|  21:16  1.080
00187>       1:17   1.080|   5:17  2.160|   9:17  3.240|  13:17   5.400|  17:17  1.620|  21:17  1.080
00188>       1:18   1.080|   5:18  2.160|   9:18  3.240|  13:18   5.400|  17:18  1.620|  21:18  1.080
00189>       1:19   1.080|   5:19  2.160|   9:19  3.240|  13:19   5.400|  17:19  1.620|  21:19  1.080
00190>       1:20   1.080|   5:20  2.160|   9:20  3.240|  13:20   5.400|  17:20  1.620|  21:20  1.080
00191>       1:21   1.080|   5:21  2.160|   9:21  3.240|  13:21   5.400|  17:21  1.620|  21:21  1.080
00192>       1:22   1.080|   5:22  2.160|   9:22  3.240|  13:22   5.400|  17:22  1.620|  21:22  1.080
00193>       1:23   1.080|   5:23  2.160|   9:23  3.240|  13:23   5.400|  17:23  1.620|  21:23  1.080
00194>       1:24   1.080|   5:24  2.160|   9:24  3.240|  13:24   5.400|  17:24  1.620|  21:24  1.080
00195>       1:25   1.080|   5:25  2.160|   9:25  3.240|  13:25   5.400|  17:25  2.160|  21:25  1.620
00196>       1:26   1.080|   5:26  2.160|   9:26  3.240|  13:26   5.400|  17:26  2.160|  21:26  1.620
00197>       1:27   1.080|   5:27  2.160|   9:27  3.240|  13:27   5.400|  17:27  2.160|  21:27  1.620
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00335>       3:45   1.080|   7:45   2.160|  11:45  28.620|  15:45   2.700|  19:45   2.160|  23:45   1.620
00336>       3:46   1.080|   7:46   2.160|  11:46  28.620|  15:46   2.700|  19:46   2.160|  23:46   1.620
00337>       3:47   1.080|   7:47   2.160|  11:47  28.620|  15:47   2.700|  19:47   2.160|  23:47   1.620
00338>       3:48   1.080|   7:48   2.160|  11:48  28.620|  15:48   2.700|  19:48   2.160|  23:48   1.620
00339>       3:49   1.080|   7:49   2.160|  11:49  59.400|  15:49   2.700|  19:49   1.620|  23:49   2.160
00340>       3:50   1.080|   7:50   2.160|  11:50  59.400|  15:50   2.700|  19:50   1.620|  23:50   2.160
00341>       3:51   1.080|   7:51   2.160|  11:51  59.400|  15:51   2.700|  19:51   1.620|  23:51   2.160
00342>       3:52   1.080|   7:52   2.160|  11:52  59.400|  15:52   2.700|  19:52   1.620|  23:52   2.160
00343>       3:53   1.080|   7:53   2.160|  11:53  59.400|  15:53   2.700|  19:53   1.620|  23:53   2.160
00344>       3:54   1.080|   7:54   2.160|  11:54  59.400|  15:54   2.700|  19:54   1.620|  23:54   2.160
00345>       3:55   1.080|   7:55   2.160|  11:55  59.400|  15:55   2.700|  19:55   1.620|  23:55   2.160
00346>       3:56   1.080|   7:56   2.160|  11:56  59.400|  15:56   2.700|  19:56   1.620|  23:56   2.160
00347>       3:57   1.080|   7:57   2.160|  11:57  59.400|  15:57   2.700|  19:57   1.620|  23:57   2.160
00348>       3:58   1.080|   7:58   2.160|  11:58  59.400|  15:58   2.700|  19:58   1.620|  23:58   2.160
00349>       3:59   1.080|   7:59   2.160|  11:59  59.400|  15:59   2.700|  19:59   1.620|  23:59   2.160
00350>       4:00   1.080|   8:00   2.160|  12:00  59.400|  16:00   2.700|  20:00   1.620|  24:00   2.160
00351>
00352> ------------------------------------------------------------------------------------------------------------
00353> R0001:C00003-----------------------------------------------------------------------------------------------
00354> *#-----------------|-----------------------------------------------------------|
00355> *#-----------------|----------------------EXISTING-----------------------------|
00356>  ------------------------
00357> | CALIB NASHYD          |   Area     (ha)=    2.390   Curve Number   (CN)= 60.30
00358> | 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
00359>  ------------------------   U.H. Tp(hrs)=     .410
00360>
00361>      Unit Hyd Qpeak  (cms)=     .223
00362>
00363>      PEAK FLOW       (cms)=     .137 (i)
00364>      TIME TO PEAK    (hrs)=   12.517
00365>      DURATION        (hrs)=   26.783, (dddd|hh:mm:)=   1|02:47
00366>      AVERAGE FLOW    (cms)=     .009
00367>      RUNOFF VOLUME    (mm)=   38.215
00368>      TOTAL RAINFALL   (mm)=  108.000
00369>      RUNOFF COEFFICIENT   =     .354
00370>
00371>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00372>
00373> ------------------------------------------------------------------------------------------------------------
00374> R0001:C00004-----------------------------------------------------------------------------------------------
00375> *#-----------------|----------------------PROPOSED-----------------------------|
00376>  ------------------------
00377> | CALIB STANDHYD        |   Area     (ha)=    3.89
00378> | 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
00379>  ------------------------
00380>                              IMPERVIOUS    PERVIOUS (i)
00381>      Surface Area     (ha)=       1.88         2.01
00382>      Dep. Storage     (mm)=       2.00         5.00
00383>      Average Slope     (%)=       2.00         2.00
00384>      Length            (m)=     100.00        35.00
00385>      Mannings n             =      .013         .250
00386>
00387>      Max.eff.Inten.(mm/hr)=     121.50        73.34
00388>                 over (min)=       2.00         9.00
00389>      Storage Coeff.  (min)=       1.92 (ii)    9.29 (ii)
00390>      Unit Hyd. Tpeak (min)=       2.00         9.00
00391>      Unit Hyd. peak  (cms)=        .57          .12
00392>                                                      *TOTALS*
00393>      PEAK FLOW       (cms)=        .34          .29          .606 (iii)
00394>      TIME TO PEAK    (hrs)=      12.20        12.27        12.200
00395>      RUNOFF VOLUME    (mm)=     105.99        37.70        55.669
00396>      TOTAL RAINFALL   (mm)=     108.00       108.00       108.000
00397>      RUNOFF COEFFICIENT   =        .98          .35          .515
00398>
00399>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00400>            CN* =  49.0    Ia = Dep. Storage  (Above)
00401>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00402>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00403>
00404> ------------------------------------------------------------------------------------------------------------
00405> R0001:C00005-----------------------------------------------------------------------------------------------
00406> *#-----------------|----------------------------------------------------------|
00407> *#-----------------|-----------------------POND-------------------------------|
00408>  ----------------------
00409> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00410> |  IN>01:201          |
00411> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
00412>  ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00413>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m)
00414>                         .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
00415>                         .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
00416>                         .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
00417>
00418>      ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
00419>      ----------------------       (ha)     (cms)     (hrs)       (mm)
00420>      INFLOW > 01:201            3.890      .606    12.200     55.669
00421>     OUTFLOW < 02:POND           3.890      .029    14.350     55.669
00422>    OVERFLOW < 03:POND OUT        .000      .000      .000      .000
00423>
00424>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00425>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00426>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00427>
00428>
00429>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    4.738
00430>                     TIME SHIFT OF PEAK FLOW          (min)=   129.00
00431>                     MAXIMUM  STORAGE   USED       (ha.m.)=.1314E+00
00432>
00433> ------------------------------------------------------------------------------------------------------------
00434> R0001:C00006-----------------------------------------------------------------------------------------------
00435> *#-----------------|----------------------------------------------------------|
00436> *#-----------------|----------------------------------------------------------|
00437>  ------------------------
00438> | CALIB STANDHYD        |   Area     (ha)=     .35
00439> | 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
00440>  ------------------------
00441>                              IMPERVIOUS    PERVIOUS (i)
00442>      Surface Area     (ha)=        .15          .20
00443>      Dep. Storage     (mm)=       2.00         5.00
00444>      Average Slope     (%)=       2.00         2.00
00445>      Length            (m)=     100.00        35.00
00446>      Mannings n             =      .013         .250
00447>
00448>      Max.eff.Inten.(mm/hr)=     121.50        94.95
00449>                 over (min)=       2.00         9.00
00450>      Storage Coeff.  (min)=       1.92 (ii)    8.57 (ii)
00451>      Unit Hyd. Tpeak (min)=       2.00         9.00
00452>      Unit Hyd. peak  (cms)=        .58          .13
00453>                                                      *TOTALS*
00454>      PEAK FLOW       (cms)=        .00          .04          .041 (iii)
00455>      TIME TO PEAK    (hrs)=      12.18        12.27        12.250
00456>      RUNOFF VOLUME    (mm)=     106.00        41.83        43.628
00457>      TOTAL RAINFALL   (mm)=     108.00       108.00       108.000
00458>      RUNOFF COEFFICIENT   =        .98          .39          .404
00459>
00460>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00461>            CN* =  49.0    Ia = Dep. Storage  (Above)
00462>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00463>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00464>
00465> ------------------------------------------------------------------------------------------------------------
00466> R0001:C00007-----------------------------------------------------------------------------------------------
00467> *#-----------------|----------------------------------------------------------|
00468>  ------------------------
00469> | CALIB STANDHYD        |   Area     (ha)=     .17
00470> | 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
00471>  ------------------------
00472>                              IMPERVIOUS    PERVIOUS (i)
00473>      Surface Area     (ha)=        .07          .10
00474>      Dep. Storage     (mm)=       2.00         5.00
00475>      Average Slope     (%)=       2.00         2.00
00476>      Length            (m)=     100.00        35.00
00477>      Mannings n             =      .013         .250
00478>
00479>      Max.eff.Inten.(mm/hr)=     121.50        94.74
00480>                 over (min)=       2.00         9.00
00481>      Storage Coeff.  (min)=       1.92 (ii)    8.58 (ii)
00482>      Unit Hyd. Tpeak (min)=       2.00         9.00
00483>      Unit Hyd. peak  (cms)=        .69          .13
00484>                                                      *TOTALS*
00485>      PEAK FLOW       (cms)=        .00          .02          .020 (iii)
00486>      TIME TO PEAK    (hrs)=      12.07        12.27        12.267
00487>      RUNOFF VOLUME    (mm)=     106.00        41.79        41.859
00488>      TOTAL RAINFALL   (mm)=     108.00       108.00       108.000
00489>      RUNOFF COEFFICIENT   =        .98          .39          .388
00490>
00491>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00492>            CN* =  49.0    Ia = Dep. Storage  (Above)
00493>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00494>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00495>
00496> ------------------------------------------------------------------------------------------------------------
00497> R0001:C00008-----------------------------------------------------------------------------------------------
00498>  ------------------------
00499> | ADD HYD               |
00500> | 06:CULVERT            |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00501>  ------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00502>                          ID 1 02:POND          3.890      .029   14.350     55.669     .000
00503>                         +ID 2 03:POND OUT       .000      .000     .000      .000     .000  **DRY**
00504>                         +ID 3 04:202            .350      .041   12.250     43.628     .000
00505>                         +ID 4 05:203            .170      .020   12.267     41.859     .000
00506>                          ========================================================================
00507>                          SUM   06:CULVERT      4.410      .079   12.250     54.181     .000
00508>
00509>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00510>
00511> ------------------------------------------------------------------------------------------------------------
00512> R0001:C00009-----------------------------------------------------------------------------------------------
00513> *#-----------------|----------------------------------------------------------|
00514> *#-----------------|----------------------------------------------------------|
00515> *#-----------------|----------------------PROPOSED-----------------------------|
00516>  ------------------------
00517> | CALIB STANDHYD        |   Area     (ha)=     .12
00518> | 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
00519>  ------------------------
00520>                              IMPERVIOUS    PERVIOUS (i)
00521>      Surface Area     (ha)=        .05          .07
00522>      Dep. Storage     (mm)=       2.00         5.00
00523>      Average Slope     (%)=       2.00         2.00
00524>      Length            (m)=     100.00        35.00
00525>      Mannings n             =      .013         .250
00526>
00527>      Max.eff.Inten.(mm/hr)=     121.50        94.95
00528>                 over (min)=       2.00         9.00
00529>      Storage Coeff.  (min)=       1.92 (ii)    8.57 (ii)
00530>      Unit Hyd. Tpeak (min)=       2.00         9.00
00531>      Unit Hyd. peak  (cms)=        .58          .13
00532>                                                      *TOTALS*
00533>      PEAK FLOW       (cms)=        .00          .01          .014 (iii)
00534>      TIME TO PEAK    (hrs)=      12.17        12.27        12.217
00535>      RUNOFF VOLUME    (mm)=     106.00        41.83        44.270
00536>      TOTAL RAINFALL   (mm)=     108.00       108.00       108.000
00537>      RUNOFF COEFFICIENT   =        .98          .39          .410
00538>
00539>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00540>            CN* =  49.0    Ia = Dep. Storage  (Above)
00541>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00542>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00543>
00544> ------------------------------------------------------------------------------------------------------------
00545> R0001:C00010-----------------------------------------------------------------------------------------------
00546> *#-----------------|----------------------PROPOSED-----------------------------|
00547>  ------------------------
00548> | CALIB STANDHYD        |   Area     (ha)=     .12
00549> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
00550>  ------------------------
00551>                              IMPERVIOUS    PERVIOUS (i)
00552>      Surface Area     (ha)=        .06          .06
00553>      Dep. Storage     (mm)=       2.00         5.00
00554>      Average Slope     (%)=       2.00         2.00
00555>      Length            (m)=     100.00        35.00
00556>      Mannings n             =      .013         .250
00557>
00558>      Max.eff.Inten.(mm/hr)=     121.50        37.67
00559>                 over (min)=       2.00        12.00
00560>      Storage Coeff.  (min)=       1.92 (ii)   11.55 (ii)
00561>      Unit Hyd. Tpeak (min)=       2.00        12.00
00562>      Unit Hyd. peak  (cms)=        .57          .10
00563>                                                      *TOTALS*
00564>      PEAK FLOW       (cms)=        .02          .00          .023 (iii)
00565>      TIME TO PEAK    (hrs)=      12.20        12.32        12.200
00566>      RUNOFF VOLUME    (mm)=     106.00        28.88        66.128
00567>      TOTAL RAINFALL   (mm)=     108.00       108.00       108.000
00568>      RUNOFF COEFFICIENT   =        .98          .27          .612
00569>
00570>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00571>            CN* =  49.0    Ia = Dep. Storage  (Above)
00572>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00573>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00574>
00575> ------------------------------------------------------------------------------------------------------------
00576> R0001:C00011-----------------------------------------------------------------------------------------------
00577> *#-----------------|----------------------EXISTING-----------------------------|
00578>  ------------------------
00579> | CALIB NASHYD          |   Area     (ha)=    2.960   Curve Number   (CN)= 60.30
00580> | 07:102        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
00581>  ------------------------   U.H. Tp(hrs)=     .440
00582>
00583>      Unit Hyd Qpeak  (cms)=     .257
00584>
00585>      PEAK FLOW       (cms)=     .162 (i)
00586>      TIME TO PEAK    (hrs)=   12.550
00587>      DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
00588>      AVERAGE FLOW    (cms)=     .012
00589>      RUNOFF VOLUME    (mm)=   38.215
00590>      TOTAL RAINFALL   (mm)=  108.000
00591>      RUNOFF COEFFICIENT   =     .354
00592>
00593>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00594>
00595> ------------------------------------------------------------------------------------------------------------
00596> R0001:C00012-----------------------------------------------------------------------------------------------
00597> *#-----------------|----------------------PROPOSED-----------------------------|
00598>  ------------------------
00599> | CALIB STANDHYD        |   Area     (ha)=     .55
00600> | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
00601>  ------------------------
00602>                              IMPERVIOUS    PERVIOUS (i)
00603>      Surface Area     (ha)=        .21          .34
00604>      Dep. Storage     (mm)=       2.00         5.00
00605>      Average Slope     (%)=       2.00         2.00
00606>      Length            (m)=     100.00        35.00
00607>      Mannings n             =      .013         .250
00608>
00609>      Max.eff.Inten.(mm/hr)=     121.50        88.09
00610>                 over (min)=       2.00         9.00
00611>      Storage Coeff.  (min)=       1.92 (ii)    8.77 (ii)
00612>      Unit Hyd. Tpeak (min)=       2.00         9.00
00613>      Unit Hyd. peak  (cms)=        .61          .13
00614>                                                      *TOTALS*
00615>      PEAK FLOW       (cms)=        .00          .06          .061 (iii)
00616>      TIME TO PEAK    (hrs)=      12.10        12.27        12.267
```

```
        RUNOFF VOLUME    (mm)=      106.00         40.61          40.674
        TOTAL RAINFALL   (mm)=      108.00        108.00         108.000
        RUNOFF COEFFICIENT   =         .98           .38            .377

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  49.0    Ia = Dep. Storage  (Above)
         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 ------------------------------------------------------------------------------------------
 R0001:C00013-------------------------------------------------------------------------------
 *#*************************************************************************
 *#                      50-YEAR, 4 HOUR CHICAGO STORM
 *#*************************************************************************
 *#-----------------|-------------------------------------------------------|
 --------------------
 | MASS STORM       |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
 | Ptotal= 96.00 mm |    Comments: 24 hour SCS II storm mass curve
 --------------------
                         Duration of storm        =    24.00 hrs
                         Mass curve time step     =    12.00 min
                         Selected storm time step =     1.00 min
                         Volume of derived storm  =    96.00 mm
```

TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr
0:01	.000	4:01	.960	8:01	1.920	12:01	108.000	16:01	2.400	20:01	1.920
0:02	.000	4:02	.960	8:02	1.920	12:02	108.000	16:02	2.400	20:02	1.920
0:03	.000	4:03	.960	8:03	1.920	12:03	108.000	16:03	2.400	20:03	1.920
0:04	.000	4:04	.960	8:04	1.920	12:04	108.000	16:04	2.400	20:04	1.920
0:05	.000	4:05	.960	8:05	1.920	12:05	108.000	16:05	2.400	20:05	1.920
0:06	.000	4:06	.960	8:06	1.920	12:06	108.000	16:06	2.400	20:06	1.920
0:07	.000	4:07	.960	8:07	1.920	12:07	108.000	16:07	2.400	20:07	1.920
0:08	.000	4:08	.960	8:08	1.920	12:08	108.000	16:08	2.400	20:08	1.920
0:09	.000	4:09	.960	8:09	1.920	12:09	108.000	16:09	2.400	20:09	1.920
0:10	.000	4:10	.960	8:10	1.920	12:10	108.000	16:10	2.400	20:10	1.920
0:11	.000	4:11	.960	8:11	1.920	12:11	108.000	16:11	2.400	20:11	1.920
0:12	.000	4:12	.960	8:12	1.920	12:12	108.000	16:12	2.400	20:12	1.920
0:13	.960	4:13	1.920	8:13	2.880	12:13	19.200	16:13	2.400	20:13	1.440
0:14	.960	4:14	1.920	8:14	2.880	12:14	19.200	16:14	2.400	20:14	1.440
0:15	.960	4:15	1.920	8:15	2.880	12:15	19.200	16:15	2.400	20:15	1.440
0:16	.960	4:16	1.920	8:16	2.880	12:16	19.200	16:16	2.400	20:16	1.440
0:17	.960	4:17	1.920	8:17	2.880	12:17	19.200	16:17	2.400	20:17	1.440
0:18	.960	4:18	1.920	8:18	2.880	12:18	19.200	16:18	2.400	20:18	1.440
0:19	.960	4:19	1.920	8:19	2.880	12:19	19.200	16:19	2.400	20:19	1.440
0:20	.960	4:20	1.920	8:20	2.880	12:20	19.200	16:20	2.400	20:20	1.440
0:21	.960	4:21	1.920	8:21	2.880	12:21	19.200	16:21	2.400	20:21	1.440
0:22	.960	4:22	1.920	8:22	2.880	12:22	19.200	16:22	2.400	20:22	1.440
0:23	.960	4:23	1.920	8:23	2.880	12:23	19.200	16:23	2.400	20:23	1.440
0:24	.960	4:24	1.920	8:24	2.880	12:24	19.200	16:24	2.400	20:24	1.440
0:25	.960	4:25	1.920	8:25	2.880	12:25	12.000	16:25	2.400	20:25	1.440
0:26	.960	4:26	1.920	8:26	2.880	12:26	12.000	16:26	2.400	20:26	1.440
0:27	.960	4:27	1.920	8:27	2.880	12:27	12.000	16:27	2.400	20:27	1.440
0:28	.960	4:28	1.920	8:28	2.880	12:28	12.000	16:28	2.400	20:28	1.440
0:29	.960	4:29	1.920	8:29	2.880	12:29	12.000	16:29	2.400	20:29	1.440
0:30	.960	4:30	1.920	8:30	2.880	12:30	12.000	16:30	2.400	20:30	1.440
0:31	.960	4:31	1.920	8:31	2.880	12:31	12.000	16:31	2.400	20:31	1.440
0:32	.960	4:32	1.920	8:32	2.880	12:32	12.000	16:32	2.400	20:32	1.440
0:33	.960	4:33	1.920	8:33	2.880	12:33	12.000	16:33	2.400	20:33	1.440
0:34	.960	4:34	1.920	8:34	2.880	12:34	12.000	16:34	2.400	20:34	1.440
0:35	.960	4:35	1.920	8:35	2.880	12:35	12.000	16:35	2.400	20:35	1.440
0:36	.960	4:36	1.920	8:36	2.880	12:36	12.000	16:36	2.400	20:36	1.440
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3:25	.960	7:25	1.920	11:25	10.560	15:25	2.400	19:25	1.440	23:25	.960
3:26	.960	7:26	1.920	11:26	10.560	15:26	2.400	19:26	1.440	23:26	.960
3:27	.960	7:27	1.920	11:27	10.560	15:27	2.400	19:27	1.440	23:27	.960
3:28	.960	7:28	1.920	11:28	10.560	15:28	2.400	19:28	1.440	23:28	.960
3:29	.960	7:29	1.920	11:29	10.560	15:29	2.400	19:29	1.440	23:29	.960
3:30	.960	7:30	1.920	11:30	10.560	15:30	2.400	19:30	1.440	23:30	.960
3:31	.960	7:31	1.920	11:31	10.560	15:31	2.400	19:31	1.440	23:31	.960
3:32	.960	7:32	1.920	11:32	10.560	15:32	2.400	19:32	1.440	23:32	.960
3:33	.960	7:33	1.920	11:33	10.560	15:33	2.400	19:33	1.440	23:33	.960
3:34	.960	7:34	1.920	11:34	10.560	15:34	2.400	19:34	1.440	23:34	.960
3:35	.960	7:35	1.920	11:35	10.560	15:35	2.400	19:35	1.440	23:35	.960
3:36	.960	7:36	1.920	11:36	10.560	15:36	2.400	19:36	1.440	23:36	.960
3:37	.960	7:37	1.920	11:37	25.440	15:37	2.400	19:37	1.920	23:37	1.440
3:38	.960	7:38	1.920	11:38	25.440	15:38	2.400	19:38	1.920	23:38	1.440
3:39	.960	7:39	1.920	11:39	25.440	15:39	2.400	19:39	1.920	23:39	1.440
3:40	.960	7:40	1.920	11:40	25.440	15:40	2.400	19:40	1.920	23:40	1.440
3:41	.960	7:41	1.920	11:41	25.440	15:41	2.400	19:41	1.920	23:41	1.440
3:42	.960	7:42	1.920	11:42	25.440	15:42	2.400	19:42	1.920	23:42	1.440
3:43	.960	7:43	1.920	11:43	25.440	15:43	2.400	19:43	1.920	23:43	1.440
3:44	.960	7:44	1.920	11:44	25.440	15:44	2.400	19:44	1.920	23:44	1.440
3:45	.960	7:45	1.920	11:45	25.440	15:45	2.400	19:45	1.920	23:45	1.440
3:46	.960	7:46	1.920	11:46	25.440	15:46	2.400	19:46	1.920	23:46	1.440
3:47	.960	7:47	1.920	11:47	25.440	15:47	2.400	19:47	1.920	23:47	1.440
3:48	.960	7:48	1.920	11:48	25.440	15:48	2.400	19:48	1.920	23:48	1.440
3:49	.960	7:49	1.920	11:49	52.800	15:49	2.400	19:49	1.440	23:49	1.920
3:50	.960	7:50	1.920	11:50	52.800	15:50	2.400	19:50	1.440	23:50	1.920
3:51	.960	7:51	1.920	11:51	52.800	15:51	2.400	19:51	1.440	23:51	1.920
3:52	.960	7:52	1.920	11:52	52.800	15:52	2.400	19:52	1.440	23:52	1.920
3:53	.960	7:53	1.920	11:53	52.800	15:53	2.400	19:53	1.440	23:53	1.920
3:54	.960	7:54	1.920	11:54	52.800	15:54	2.400	19:54	1.440	23:54	1.920
3:55	.960	7:55	1.920	11:55	52.800	15:55	2.400	19:55	1.440	23:55	1.920
3:56	.960	7:56	1.920	11:56	52.800	15:56	2.400	19:56	1.440	23:56	1.920
3:57	.960	7:57	1.920	11:57	52.800	15:57	2.400	19:57	1.440	23:57	1.920
3:58	.960	7:58	1.920	11:58	52.800	15:58	2.400	19:58	1.440	23:58	1.920
3:59	.960	7:59	1.920	11:59	52.800	15:59	2.400	19:59	1.440	23:59	1.920
4:00	.960	8:00	1.920	12:00	52.800	16:00	2.400	20:00	1.440	24:00	1.920

```
 ------------------------------------------------------------------------------------------
 R0001:C00014-------------------------------------------------------------------------------
 *#-----------------|-------------------------------------------------------|
 *#-----------------|--------------------EXISTING----------------------------|
 --------------------------
 | CALIB NASHYD             |    Area     (ha)=     2.390   Curve Number   (CN)= 60.30
 | 01:101          DT= 1.00 |    Ia       (mm)=     6.700   # of Linear Res.(N)=  3.00
 --------------------------    U.H. Tp(hrs)=      .410

      Unit Hyd Qpeak  (cms)=      .223

      PEAK FLOW       (cms)=      .111 (i)
      TIME TO PEAK    (hrs)=    12.533
      DURATION        (hrs)=    26.783, (dddd|hh:mm:)=   1|02:47
      AVERAGE FLOW    (cms)=      .008
      RUNOFF VOLUME    (mm)=    31.086
      TOTAL RAINFALL   (mm)=    95.999
      RUNOFF COEFFICIENT   =      .324

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

 ------------------------------------------------------------------------------------------
 R0001:C00015-------------------------------------------------------------------------------
 *#-----------------|--------------------PROPOSED----------------------------|
 --------------------------
 | CALIB STANDHYD           |    Area     (ha)=     3.89
 | 01:201          DT= 1.00 |    Total Imp(%)=    48.40   Dir. Conn.(%)=   26.30
 --------------------------
                                  IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=        1.88           2.01
      Dep. Storage     (mm)=        2.00           5.00
      Average Slope     (%)=        2.00           2.00
      Length            (m)=      100.00          35.00
      Mannings n          =         .013           .250

      Max.eff.Inten.(mm/hr)=      108.00          59.19
                 over (min)         2.00          10.00
      Storage Coeff.  (min)=        2.01 (ii)     10.05 (ii)
      Unit Hyd. Tpeak (min)=        2.00          10.00
      Unit Hyd. peak  (cms)=         .56            .11
                                                                *TOTALS*
```

```
      PEAK FLOW       (cms)=        .31          .23          .504 (iii)
      TIME TO PEAK    (hrs)=      12.20        12.28        12.200
      RUNOFF VOLUME    (mm)=      94.00        30.82        47.438
      TOTAL RAINFALL   (mm)=      96.00        96.00        95.999
      RUNOFF COEFFICIENT   =        .98          .32          .494

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00016-----------------------------------------------------------------------------------------------------
*#----------------|-------------------------------------------------------------------|
*#----------------|----------------------POND-----------------------------------------|
  |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
  |  IN>01:201          | ========================  OUTLFOW STORAGE TABLE  ========================
  | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
                        OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
                         .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
                         .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00

      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
      ----------------------      (ha)     (cms)     (hrs)      (mm)
      INFLOW > 01:201           3.890      .504    12.200     47.438
    OUTFLOW < 02:POND           3.890      .021    14.617     47.437
   OVERFLOW < 03:POND OUT        .000      .000      .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    4.089
                    TIME SHIFT OF PEAK FLOW          (min)=   145.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.1112E+00

R0001:C00017-----------------------------------------------------------------------------------------------------
*#----------------|-------------------------------------------------------------------|
*#----------------|-------------------------------------------------------------------|
 ----------------------
| CALIB STANDHYD       |   Area    (ha)=     .35
| 04:202       DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
 ----------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .15          .20
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    108.00        78.05
                  over (min)=      2.00         9.00
      Storage Coeff.  (min)=      2.01 (ii)    9.21 (ii)
      Unit Hyd. Tpeak (min)=      2.00         9.00
      Unit Hyd. peak  (cms)=       .56          .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .03          .033 (iii)
      TIME TO PEAK    (hrs)=     12.20        12.27        12.250
      RUNOFF VOLUME    (mm)=     94.00        34.38        36.051
      TOTAL RAINFALL   (mm)=     96.00        96.00        95.999
      RUNOFF COEFFICIENT   =       .98          .36          .376

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00018-----------------------------------------------------------------------------------------------------
*#----------------|-------------------------------------------------------------------|
*#----------------|-------------------------------------------------------------------|
 ----------------------
| CALIB STANDHYD       |   Area    (ha)=     .17
| 05:203       DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
 ----------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .07          .10
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    108.00        77.88
                  over (min)=      2.00         9.00
      Storage Coeff.  (min)=      2.01 (ii)    9.21 (ii)
      Unit Hyd. Tpeak (min)=      2.00         9.00
      Unit Hyd. peak  (cms)=       .81          .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .02          .016 (iii)
      TIME TO PEAK    (hrs)=     12.05        12.27        12.267
      RUNOFF VOLUME    (mm)=     94.00        34.35        34.410
      TOTAL RAINFALL   (mm)=     96.00        96.00        95.999
      RUNOFF COEFFICIENT   =       .98          .36          .358

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00019-----------------------------------------------------------------------------------------------------
 ------------------------
| ADD HYD              |
| 06:CULVERT           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 02:POND           3.890     .021   14.617     47.437    .000
                      +ID 2 03:POND OUT         .000     .000     .000      .000    .000  **DRY**
                      +ID 3 04:202              .350     .033   12.250     36.051    .000
                      +ID 4 05:203              .170     .016   12.267     34.410    .000
                      ==========================================================================
                      SUM   06:CULVERT         4.410     .066   12.267     46.031    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00020-----------------------------------------------------------------------------------------------------
*#----------------|-------------------------------------------------------------------|
*#----------------|-------------------------------------------------------------------|
*#----------------|----------------------PROPOSED-------------------------------------|
 ----------------------
| CALIB STANDHYD       |   Area    (ha)=     .12
| 09:204       DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
 ----------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .05          .07
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    108.00        78.06
                  over (min)=      2.00         9.00
      Storage Coeff.  (min)=      2.01 (ii)    9.21 (ii)
      Unit Hyd. Tpeak (min)=      2.00         9.00
      Unit Hyd. peak  (cms)=       .56          .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .01          .011 (iii)
      TIME TO PEAK    (hrs)=     12.17        12.27        12.217
      RUNOFF VOLUME    (mm)=     94.00        34.38        36.647
      TOTAL RAINFALL   (mm)=     96.00        96.00        95.999
      RUNOFF COEFFICIENT   =       .98          .36          .382

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00021-----------------------------------------------------------------------------------------------------
*#----------------|----------------------PROPOSED-------------------------------------|
 ----------------------
| CALIB STANDHYD       |   Area    (ha)=     .12
| 10:205       DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
 ----------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .06          .06
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    108.00        28.92
                  over (min)=      2.00        13.00
      Storage Coeff.  (min)=      2.01 (ii)   12.71 (ii)
      Unit Hyd. Tpeak (min)=      2.00        13.00
      Unit Hyd. peak  (cms)=       .56          .09
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .02          .00          .020 (iii)
      TIME TO PEAK    (hrs)=     12.20        12.33        12.200
      RUNOFF VOLUME    (mm)=     94.00        23.30        57.449
      TOTAL RAINFALL   (mm)=     96.00        96.00        95.999
      RUNOFF COEFFICIENT   =       .98          .24          .598

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00022-----------------------------------------------------------------------------------------------------
*#----------------|----------------------EXISTING-------------------------------------|
 ----------------------
| CALIB NASHYD         |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
| 07:102       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
 ----------------------   U.H. Tp(hrs)=     .440

      Unit Hyd Qpeak  (cms)=     .257

      PEAK FLOW       (cms)=     .131 (i)
      TIME TO PEAK    (hrs)=   12.567
      DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
      AVERAGE FLOW    (cms)=     .009
      RUNOFF VOLUME    (mm)=   31.086
      TOTAL RAINFALL   (mm)=   95.999
      RUNOFF COEFFICIENT   =     .324

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

R0001:C00023-----------------------------------------------------------------------------------------------------
*#----------------|----------------------PROPOSED-------------------------------------|
 ----------------------
| CALIB STANDHYD       |   Area    (ha)=     .55
| 08:206       DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
 ----------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .21          .34
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n            =      .013         .250

      Max.eff.Inten.(mm/hr)=    108.00        72.30
                  over (min)=      2.00         9.00
      Storage Coeff.  (min)=      2.01 (ii)    9.43 (ii)
      Unit Hyd. Tpeak (min)=      2.00         9.00
      Unit Hyd. peak  (cms)=       .60          .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .05          .049 (iii)
      TIME TO PEAK    (hrs)=     12.10        12.27        12.267
      RUNOFF VOLUME    (mm)=     94.00        33.32        33.383
      TOTAL RAINFALL   (mm)=     96.00        96.00        95.999
      RUNOFF COEFFICIENT   =       .98          .35          .348

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00024-----------------------------------------------------------------------------------------------------
*#########################################################################
*#                          25-YEAR, 4 HOUR CHICAGO STORM
*#########################################################################
*#----------------|-------------------------------------------------------------------|
 --------------------
| MASS STORM         |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
| Ptotal= 86.40 mm   |    Comments: 24 hour SCS II storm mass curve
 --------------------
                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    1.00 min
                          Volume of derived storm  =   86.40 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:01    .000|  4:01    .864|  8:01   1.728|  12:01  97.200|  16:01   2.160|  20:01   1.728
      0:02    .000|  4:02    .864|  8:02   1.728|  12:02  97.200|  16:02   2.160|  20:02   1.728
      0:03    .000|  4:03    .864|  8:03   1.728|  12:03  97.200|  16:03   2.160|  20:03   1.728
      0:04    .000|  4:04    .864|  8:04   1.728|  12:04  97.200|  16:04   2.160|  20:04   1.728
      0:05    .000|  4:05    .864|  8:05   1.728|  12:05  97.200|  16:05   2.160|  20:05   1.728
      0:06    .000|  4:06    .864|  8:06   1.728|  12:06  97.200|  16:06   2.160|  20:06   1.728
      0:07    .000|  4:07    .864|  8:07   1.728|  12:07  97.200|  16:07   2.160|  20:07   1.728
      0:08    .000|  4:08    .864|  8:08   1.728|  12:08  97.200|  16:08   2.160|  20:08   1.728
      0:09    .000|  4:09    .864|  8:09   1.728|  12:09  97.200|  16:09   2.160|  20:09   1.728
      0:10    .000|  4:10    .864|  8:10   1.728|  12:10  97.200|  16:10   2.160|  20:10   1.728
      0:11    .000|  4:11    .864|  8:11   1.728|  12:11  97.200|  16:11   2.160|  20:11   1.728
      0:12    .000|  4:12    .864|  8:12   1.728|  12:12  97.200|  16:12   2.160|  20:12   1.728
      0:13    .864|  4:13   1.728|  8:13   2.592|  12:13  17.280|  16:13   2.160|  20:13   1.296
      0:14    .864|  4:14   1.728|  8:14   2.592|  12:14  17.280|  16:14   2.160|  20:14   1.296
      0:15    .864|  4:15   1.728|  8:15   2.592|  12:15  17.280|  16:15   2.160|  20:15   1.296
      0:16    .864|  4:16   1.728|  8:16   2.592|  12:16  17.280|  16:16   2.160|  20:16   1.296
      0:17    .864|  4:17   1.728|  8:17   2.592|  12:17  17.280|  16:17   2.160|  20:17   1.296
      0:18    .864|  4:18   1.728|  8:18   2.592|  12:18  17.280|  16:18   2.160|  20:18   1.296
      0:19    .864|  4:19   1.728|  8:19   2.592|  12:19  17.280|  16:19   2.160|  20:19   1.296
      0:20    .864|  4:20   1.728|  8:20   2.592|  12:20  17.280|  16:20   2.160|  20:20   1.296
      0:21    .864|  4:21   1.728|  8:21   2.592|  12:21  17.280|  16:21   2.160|  20:21   1.296
      0:22    .864|  4:22   1.728|  8:22   2.592|  12:22  17.280|  16:22   2.160|  20:22   1.296
      0:23    .864|  4:23   1.728|  8:23   2.592|  12:23  17.280|  16:23   2.160|  20:23   1.296
      0:24    .864|  4:24   1.728|  8:24   2.592|  12:24  17.280|  16:24   2.160|  20:24   1.296
      0:25    .864|  4:25   1.728|  8:25   2.592|  12:25  10.800|  16:25   2.160|  20:25   1.296
      0:26    .864|  4:26   1.728|  8:26   2.592|  12:26  10.800|  16:26   2.160|  20:26   1.296
      0:27    .864|  4:27   1.728|  8:27   2.592|  12:27  10.800|  16:27   2.160|  20:27   1.296
      0:28    .864|  4:28   1.728|  8:28   2.592|  12:28  10.800|  16:28   2.160|  20:28   1.296
      0:29    .864|  4:29   1.728|  8:29   2.592|  12:29  10.800|  16:29   2.160|  20:29   1.296
      0:30    .864|  4:30   1.728|  8:30   2.592|  12:30  10.800|  16:30   2.160|  20:30   1.296
      0:31    .864|  4:31   1.728|  8:31   2.592|  12:31  10.800|  16:31   2.160|  20:31   1.296
      0:32    .864|  4:32   1.728|  8:32   2.592|  12:32  10.800|  16:32   2.160|  20:32   1.296
      0:33    .864|  4:33   1.728|  8:33   2.592|  12:33  10.800|  16:33   2.160|  20:33   1.296
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```

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01348>       2:54    .864|   6:54  1.728|  10:54  4.752|  14:54  2.592|  18:54  1.296|  22:54  1.296|
01349>       2:55    .864|   6:55  1.728|  10:55  4.752|  14:55  2.592|  18:55  1.296|  22:55  1.296|
01350>       2:56    .864|   6:56  1.728|  10:56  4.752|  14:56  2.592|  18:56  1.296|  22:56  1.296|
01351>       2:57    .864|   6:57  1.728|  10:57  4.752|  14:57  2.592|  18:57  1.296|  22:57  1.296|
01352>       2:58    .864|   6:58  1.728|  10:58  4.752|  14:58  2.592|  18:58  1.296|  22:58  1.296|
01353>       2:59    .864|   6:59  1.728|  10:59  4.752|  14:59  2.592|  18:59  1.296|  22:59  1.296|
01354>       3:00    .864|   7:00  1.728|  11:00  4.752|  15:00  2.592|  19:00  1.296|  23:00  1.296|
01355>       3:01    .864|   7:01  1.728|  11:01  4.752|  15:01  2.592|  19:01  1.296|  23:01    .864|
01356>       3:02    .864|   7:02  1.728|  11:02  4.752|  15:02  2.592|  19:02  1.296|  23:02    .864|
01357>       3:03    .864|   7:03  1.728|  11:03  4.752|  15:03  2.592|  19:03  1.296|  23:03    .864|
01358>       3:04    .864|   7:04  1.728|  11:04  4.752|  15:04  2.592|  19:04  1.296|  23:04    .864|
01359>       3:05    .864|   7:05  1.728|  11:05  4.752|  15:05  2.592|  19:05  1.296|  23:05    .864|
01360>       3:06    .864|   7:06  1.728|  11:06  4.752|  15:06  2.592|  19:06  1.296|  23:06    .864|
01361>       3:07    .864|   7:07  1.728|  11:07  4.752|  15:07  2.592|  19:07  1.296|  23:07    .864|
01362>       3:08    .864|   7:08  1.728|  11:08  4.752|  15:08  2.592|  19:08  1.296|  23:08    .864|
01363>       3:09    .864|   7:09  1.728|  11:09  4.752|  15:09  2.592|  19:09  1.296|  23:09    .864|
01364>       3:10    .864|   7:10  1.728|  11:10  4.752|  15:10  2.592|  19:10  1.296|  23:10    .864|
01365>       3:11    .864|   7:11  1.728|  11:11  4.752|  15:11  2.592|  19:11  1.296|  23:11    .864|
01366>       3:12    .864|   7:12  1.728|  11:12  4.752|  15:12  2.592|  19:12  1.296|  23:12    .864|
01367>       3:13    .864|   7:13  1.728|  11:13  6.480|  15:13  2.160|  19:13  1.728|  23:13    .864|
01368>       3:14    .864|   7:14  1.728|  11:14  6.480|  15:14  2.160|  19:14  1.728|  23:14    .864|
01369>       3:15    .864|   7:15  1.728|  11:15  6.480|  15:15  2.160|  19:15  1.728|  23:15    .864|
01370>       3:16    .864|   7:16  1.728|  11:16  6.480|  15:16  2.160|  19:16  1.728|  23:16    .864|
01371>       3:17    .864|   7:17  1.728|  11:17  6.480|  15:17  2.160|  19:17  1.728|  23:17    .864|
01372>       3:18    .864|   7:18  1.728|  11:18  6.480|  15:18  2.160|  19:18  1.728|  23:18    .864|
01373>       3:19    .864|   7:19  1.728|  11:19  6.480|  15:19  2.160|  19:19  1.728|  23:19    .864|
01374>       3:20    .864|   7:20  1.728|  11:20  6.480|  15:20  2.160|  19:20  1.728|  23:20    .864|
01375>       3:21    .864|   7:21  1.728|  11:21  6.480|  15:21  2.160|  19:21  1.728|  23:21    .864|
01376>       3:22    .864|   7:22  1.728|  11:22  6.480|  15:22  2.160|  19:22  1.728|  23:22    .864|
01377>       3:23    .864|   7:23  1.728|  11:23  6.480|  15:23  2.160|  19:23  1.728|  23:23    .864|
01378>       3:24    .864|   7:24  1.728|  11:24  6.480|  15:24  2.160|  19:24  1.728|  23:24    .864|
01379>       3:25    .864|   7:25  1.728|  11:25  9.504|  15:25  2.160|  19:25  1.296|  23:25    .864|
01380>       3:26    .864|   7:26  1.728|  11:26  9.504|  15:26  2.160|  19:26  1.296|  23:26    .864|
01381>       3:27    .864|   7:27  1.728|  11:27  9.504|  15:27  2.160|  19:27  1.296|  23:27    .864|
01382>       3:28    .864|   7:28  1.728|  11:28  9.504|  15:28  2.160|  19:28  1.296|  23:28    .864|
01383>       3:29    .864|   7:29  1.728|  11:29  9.504|  15:29  2.160|  19:29  1.296|  23:29    .864|
01384>       3:30    .864|   7:30  1.728|  11:30  9.504|  15:30  2.160|  19:30  1.296|  23:30    .864|
01385>       3:31    .864|   7:31  1.728|  11:31  9.504|  15:31  2.160|  19:31  1.296|  23:31    .864|
01386>       3:32    .864|   7:32  1.728|  11:32  9.504|  15:32  2.160|  19:32  1.296|  23:32    .864|
01387>       3:33    .864|   7:33  1.728|  11:33  9.504|  15:33  2.160|  19:33  1.296|  23:33    .864|
01388>       3:34    .864|   7:34  1.728|  11:34  9.504|  15:34  2.160|  19:34  1.296|  23:34    .864|
01389>       3:35    .864|   7:35  1.728|  11:35  9.504|  15:35  2.160|  19:35  1.296|  23:35    .864|
01390>       3:36    .864|   7:36  1.728|  11:36  9.504|  15:36  2.160|  19:36  1.296|  23:36    .864|
01391>       3:37    .864|   7:37  1.728|  11:37 22.896|  15:37  2.160|  19:37  1.728|  23:37  1.296|
01392>       3:38    .864|   7:38  1.728|  11:38 22.896|  15:38  2.160|  19:38  1.728|  23:38  1.296|
01393>       3:39    .864|   7:39  1.728|  11:39 22.896|  15:39  2.160|  19:39  1.728|  23:39  1.296|
01394>       3:40    .864|   7:40  1.728|  11:40 22.896|  15:40  2.160|  19:40  1.728|  23:40  1.296|
01395>       3:41    .864|   7:41  1.728|  11:41 22.896|  15:41  2.160|  19:41  1.728|  23:41  1.296|
01396>       3:42    .864|   7:42  1.728|  11:42 22.896|  15:42  2.160|  19:42  1.728|  23:42  1.296|
01397>       3:43    .864|   7:43  1.728|  11:43 22.896|  15:43  2.160|  19:43  1.728|  23:43  1.296|
01398>       3:44    .864|   7:44  1.728|  11:44 22.896|  15:44  2.160|  19:44  1.728|  23:44  1.296|
01399>       3:45    .864|   7:45  1.728|  11:45 22.896|  15:45  2.160|  19:45  1.728|  23:45  1.296|
01400>       3:46    .864|   7:46  1.728|  11:46 22.896|  15:46  2.160|  19:46  1.728|  23:46  1.296|
01401>       3:47    .864|   7:47  1.728|  11:47 22.896|  15:47  2.160|  19:47  1.728|  23:47  1.296|
01402>       3:48    .864|   7:48  1.728|  11:48 22.896|  15:48  2.160|  19:48  1.728|  23:48  1.296|
01403>       3:49    .864|   7:49  1.728|  11:49 47.520|  15:49  2.160|  19:49  1.296|  23:49  1.728|
01404>       3:50    .864|   7:50  1.728|  11:50 47.520|  15:50  2.160|  19:50  1.296|  23:50  1.728|
01405>       3:51    .864|   7:51  1.728|  11:51 47.520|  15:51  2.160|  19:51  1.296|  23:51  1.728|
01406>       3:52    .864|   7:52  1.728|  11:52 47.520|  15:52  2.160|  19:52  1.296|  23:52  1.728|
01407>       3:53    .864|   7:53  1.728|  11:53 47.520|  15:53  2.160|  19:53  1.296|  23:53  1.728|
01408>       3:54    .864|   7:54  1.728|  11:54 47.520|  15:54  2.160|  19:54  1.296|  23:54  1.728|
01409>       3:55    .864|   7:55  1.728|  11:55 47.520|  15:55  2.160|  19:55  1.296|  23:55  1.728|
01410>       3:56    .864|   7:56  1.728|  11:56 47.520|  15:56  2.160|  19:56  1.296|  23:56  1.728|
01411>       3:57    .864|   7:57  1.728|  11:57 47.520|  15:57  2.160|  19:57  1.296|  23:57  1.728|
01412>       3:58    .864|   7:58  1.728|  11:58 47.520|  15:58  2.160|  19:58  1.296|  23:58  1.728|
01413>       3:59    .864|   7:59  1.728|  11:59 47.520|  15:59  2.160|  19:59  1.296|  23:59  1.728|
01414>       4:00    .864|   8:00  1.728|  12:00 47.520|  16:00  2.160|  20:00  1.296|  24:00  1.728|
01415>
01416> ------------------------------------------------------------------------------------------------------------------------------------------------
01417> R0001:C00025-----------------------------------------------------------------------------------------------------------------------------------
01418> *#-----------------|-------------------------------------------------------------------------------|
01419> *#-----------------|-----------------EXISTING--------------------------------------------------------|
01420> ------------------------
01421> | CALIB NASHYD        |   Area    (ha)=    2.390   Curve Number    (CN)= 60.30
01422> | 01:101       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
01423> ------------------------   U.H. Tp(hrs)=     .410
01424>
01425>      Unit Hyd Qpeak  (cms)=      .223
01426>
01427>      PEAK FLOW          (cms)=      .091 (i)
01428>      TIME TO PEAK       (hrs)=   12.533
01429>      DURATION           (hrs)=   26.783, (dddd|hh:mm:)=   1|02:47
01430>      AVERAGE FLOW       (cms)=      .006
01431>      RUNOFF VOLUME       (mm)=   25.725
01432>      TOTAL RAINFALL      (mm)=   86.401
01433>      RUNOFF COEFFICIENT   =      .298
01434>
01435>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01436>
01437> ------------------------------------------------------------------------------------------------------------------------------------------------
01438> R0001:C00026-----------------------------------------------------------------------------------------------------------------------------------
01439> *#-----------------|-----------------PROPOSED------------------------------------------------------|
01440> ------------------------
01441> | CALIB STANDHYD      |   Area    (ha)=    3.89
01442> | 01:201       DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
01443> ------------------------
01444>                                IMPERVIOUS    PERVIOUS (i)
01445>      Surface Area      (ha)=       1.88         2.01
01446>      Dep. Storage      (mm)=       2.00         5.00
01447>      Average Slope      (%)=       2.00         2.00
01448>      Length             (m)=     100.00        35.00
01449>      Mannings n              =       .013         .250
01450>
01451>      Max.eff.Inten.(mm/hr)=      97.20        48.55
01452>                over (min)        2.00        11.00
01453>      Storage Coeff.  (min)=       2.10 (ii)   10.80 (ii)
01454>      Unit Hyd. Tpeak (min)=       2.00        11.00
01455>      Unit Hyd. peak  (cms)=        .54          .10
01456>                                                          *TOTALS*
01457>      PEAK FLOW          (cms)=       .28          .18          .427 (iii)
01458>      TIME TO PEAK       (hrs)=     12.20        12.30        12.200
01459>      RUNOFF VOLUME       (mm)=     84.40        25.64        41.097
01460>      TOTAL RAINFALL      (mm)=     86.40        86.40        86.401
01461>      RUNOFF COEFFICIENT   =         .98          .30          .476
01462>
01463>       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01464>           CN* =  49.0    Ia = Dep. Storage  (Above)
01465>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01466>       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01467>
01468> ------------------------------------------------------------------------------------------------------------------------------------------------
01469> R0001:C00027-----------------------------------------------------------------------------------------------------------------------------------
01470> *#-----------------|-------------------------------------------------------------------------------|
01471> *#-----------------|-----------------POND----------------------------------------------------------|
01472> ------------------------
01473> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
01474> |   IN>01:201         |
01475> | OUT<02:POND         | ========================  OUTFLOW STORAGE TABLE  ========================
01476> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
01477>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
01478>                           .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
01479>                           .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
01480>                           .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
01481>
01482>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
01483>      ----------------------      (ha)     (cms)     (hrs)       (mm)
01484>       INFLOW > 01:201           3.890      .427    12.200     41.097
01485>      OUTFLOW < 02:POND          3.890      .019    14.483     41.096
01486>     OVERFLOW < 03:POND OUT       .000      .000      .000       .000
01487>
01488>                        TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
01489>                        CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
01490>                        PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
01491>
01492>
01493>                        PEAK  FLOW   REDUCTION [Qout/Qin](%)=    4.502
01494>                        TIME SHIFT OF PEAK FLOW         (min)=   137.00
01495>                        MAXIMUM  STORAGE   USED        (ha.m.)=.9477E-01
01496>
01497> ------------------------------------------------------------------------------------------------------------------------------------------------
01498> R0001:C00028-----------------------------------------------------------------------------------------------------------------------------------
01499> *#-----------------|-------------------------------------------------------------------------------|
01500> *#-----------------|-------------------------------------------------------------------------------|
01501> ------------------------
01502> | CALIB STANDHYD      |   Area    (ha)=     .35
01503> | 04:202       DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
01504> ------------------------
01505>                                IMPERVIOUS    PERVIOUS (i)
01506>      Surface Area      (ha)=        .15          .20
01507>      Dep. Storage      (mm)=       2.00         5.00
01508>      Average Slope      (%)=       2.00         2.00
01509>      Length             (m)=     100.00        35.00
01510>      Mannings n              =       .013         .250
01511>
01512>      Max.eff.Inten.(mm/hr)=      97.20        64.46
01513>                over (min)        2.00        10.00
01514>      Storage Coeff.  (min)=       2.10 (ii)    9.86 (ii)
01515>      Unit Hyd. Tpeak (min)=       2.00        10.00
01516>      Unit Hyd. peak  (cms)=        .54          .11
01517>                                                          *TOTALS*
01518>      PEAK FLOW          (cms)=       .00          .03          .026 (iii)
01519>      TIME TO PEAK       (hrs)=     12.20        12.28        12.267
01520>      RUNOFF VOLUME       (mm)=     84.40        28.75        30.305
01521>      TOTAL RAINFALL      (mm)=     86.40        86.40        86.401
01522>      RUNOFF COEFFICIENT   =         .98          .33          .351
01523>
01524>       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01525>           CN* =  49.0    Ia = Dep. Storage  (Above)
01526>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01527>       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01528>
01529> ------------------------------------------------------------------------------------------------------------------------------------------------
01530> R0001:C00029-----------------------------------------------------------------------------------------------------------------------------------
01531> *#-----------------|-------------------------------------------------------------------------------|
01532> ------------------------
01533> | CALIB STANDHYD      |   Area    (ha)=     .17
01534> | 05:203       DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
01535> ------------------------
01536>                                IMPERVIOUS    PERVIOUS (i)
01537>      Surface Area      (ha)=        .07          .10
01538>      Dep. Storage      (mm)=       2.00         5.00
01539>      Average Slope      (%)=       2.00         2.00
01540>      Length             (m)=     100.00        35.00
```

```
      Mannings n           =      .013         .250

      Max.eff.Inten.(mm/hr)=     97.20        64.31
                  over (min)=      2.00        10.00
      Storage Coeff.  (min)=      2.10 (ii)    9.87 (ii)
      Unit Hyd. Tpeak (min)=      2.00        10.00
      Unit Hyd. peak  (cms)=       .80          .11
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .01          .013 (iii)
      TIME TO PEAK    (hrs)=     12.07        12.28        12.283
      RUNOFF VOLUME    (mm)=     84.40        28.72        28.775
      TOTAL RAINFALL   (mm)=     86.40        86.40        86.401
      RUNOFF COEFFICIENT   =       .98          .33          .333

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00030-----------------------------------------------------------------------------------------------------------
 | ADD HYD          |
 | 06:CULVERT       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------------                     (ha)     (cms)    (hrs)       (mm)   (cms)
                        ID 1 02:POND          3.890      .019   14.483    41.096    .000
                       +ID 2 03:POND OUT       .000      .000     .000      .000    .000  **DRY**
                       +ID 3 04:202            .350      .026   12.267    30.305    .000
                       +ID 4 05:203            .170      .013   12.283    28.775    .000
                        ==========================================================================
                        SUM   06:CULVERT       4.410      .056   12.267    39.764    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00031-----------------------------------------------------------------------------------------------------------
*#-----------------|-------------------------------------------------------------|
*#-----------------|-------------------------------------------------------------|
*#-----------------|----------------------PROPOSED-------------------------------|
-------------------------
 | CALIB STANDHYD         |   Area    (ha)=     .12
 | 09:204       DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .05          .07
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n           =      .013         .250

      Max.eff.Inten.(mm/hr)=     97.20        64.46
                  over (min)=      2.00        10.00
      Storage Coeff.  (min)=      2.10 (ii)    9.86 (ii)
      Unit Hyd. Tpeak (min)=      2.00        10.00
      Unit Hyd. peak  (cms)=       .55          .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .01          .009 (iii)
      TIME TO PEAK    (hrs)=     12.17        12.28        12.217
      RUNOFF VOLUME    (mm)=     84.40        28.75        30.861
      TOTAL RAINFALL   (mm)=     86.40        86.40        86.401
      RUNOFF COEFFICIENT   =       .98          .33          .357

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00032-----------------------------------------------------------------------------------------------------------
*#-----------------|-------------------------------------------------------------|
*#-----------------|----------------------PROPOSED-------------------------------|
-------------------------
 | CALIB STANDHYD         |   Area    (ha)=     .12
 | 10:205       DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .06          .06
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n           =      .013         .250

      Max.eff.Inten.(mm/hr)=     97.20        22.72
                  over (min)=      2.00        14.00
      Storage Coeff.  (min)=      2.10 (ii)   13.88 (ii)
      Unit Hyd. Tpeak (min)=      2.00        14.00
      Unit Hyd. peak  (cms)=       .54          .08
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .02          .00          .018 (iii)
      TIME TO PEAK    (hrs)=     12.20        12.35        12.200
      RUNOFF VOLUME    (mm)=     84.40        19.16        50.673
      TOTAL RAINFALL   (mm)=     86.40        86.40        86.401
      RUNOFF COEFFICIENT   =       .98          .22          .586

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00033-----------------------------------------------------------------------------------------------------------
*#-----------------|----------------------EXISTING-------------------------------|
-------------------------
 | CALIB NASHYD           |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
 | 07:102       DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=     .440

      Unit Hyd Qpeak  (cms)=     .257

      PEAK FLOW       (cms)=     .108 (i)
      TIME TO PEAK    (hrs)=   12.567
      DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
      AVERAGE FLOW    (cms)=     .008
      RUNOFF VOLUME    (mm)=   25.725
      TOTAL RAINFALL   (mm)=   86.401
      RUNOFF COEFFICIENT   =     .298

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

R0001:C00034-----------------------------------------------------------------------------------------------------------
*#-----------------|----------------------PROPOSED-------------------------------|
-------------------------
 | CALIB STANDHYD         |   Area    (ha)=     .55
 | 08:206       DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       .21          .34
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      2.00         2.00
      Length            (m)=    100.00        35.00
      Mannings n           =      .013         .250

      Max.eff.Inten.(mm/hr)=     97.20        59.60
                  over (min)=      2.00        10.00
      Storage Coeff.  (min)=      2.10 (ii)   10.11 (ii)
      Unit Hyd. Tpeak (min)=      2.00        10.00
      Unit Hyd. peak  (cms)=       .59          .11
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .00          .04          .039 (iii)
      TIME TO PEAK    (hrs)=     12.12        12.28        12.283
      RUNOFF VOLUME    (mm)=     84.40        27.82        27.878
      TOTAL RAINFALL   (mm)=     86.40        86.40        86.401
      RUNOFF COEFFICIENT   =       .98          .32          .323

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  49.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

R0001:C00035-----------------------------------------------------------------------------------------------------------
*#**************************************************************************
*#                    10-YEAR, 4 HOUR CHICAGO STORM
*#**************************************************************************
*#-----------------|-------------------------------------------------------------|
 | MASS STORM     |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
 | Ptotal= 72.00 mm |  Comments: 24 hour SCS II storm mass curve
-------------------

                        Duration of storm        =  24.00 hrs
                        Mass curve time step     =  12.00 min
                        Selected storm time step =   1.00 min
                        Volume of derived storm  =  72.00 mm
```

TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr	TIME hh:mm	RAIN mm/hr
0:01	.000	4:01	.720	8:01	1.440	12:01	81.000	16:01	1.800	20:01	1.440
0:02	.000	4:02	.720	8:02	1.440	12:02	81.000	16:02	1.800	20:02	1.440
0:03	.000	4:03	.720	8:03	1.440	12:03	81.000	16:03	1.800	20:03	1.440
0:04	.000	4:04	.720	8:04	1.440	12:04	81.000	16:04	1.800	20:04	1.440
0:05	.000	4:05	.720	8:05	1.440	12:05	81.000	16:05	1.800	20:05	1.440
0:06	.000	4:06	.720	8:06	1.440	12:06	81.000	16:06	1.800	20:06	1.440
0:07	.000	4:07	.720	8:07	1.440	12:07	81.000	16:07	1.800	20:07	1.440
0:08	.000	4:08	.720	8:08	1.440	12:08	81.000	16:08	1.800	20:08	1.440
0:09	.000	4:09	.720	8:09	1.440	12:09	81.000	16:09	1.800	20:09	1.440
0:10	.000	4:10	.720	8:10	1.440	12:10	81.000	16:10	1.800	20:10	1.440
0:11	.000	4:11	.720	8:11	1.440	12:11	81.000	16:11	1.800	20:11	1.440
0:12	.000	4:12	.720	8:12	1.440	12:12	81.000	16:12	1.800	20:12	1.440
0:13	.720	4:13	1.440	8:13	2.160	12:13	14.400	16:13	1.800	20:13	1.080
0:14	.720	4:14	1.440	8:14	2.160	12:14	14.400	16:14	1.800	20:14	1.080
0:15	.720	4:15	1.440	8:15	2.160	12:15	14.400	16:15	1.800	20:15	1.080
0:16	.720	4:16	1.440	8:16	2.160	12:16	14.400	16:16	1.800	20:16	1.080
0:17	.720	4:17	1.440	8:17	2.160	12:17	14.400	16:17	1.800	20:17	1.080
0:18	.720	4:18	1.440	8:18	2.160	12:18	14.400	16:18	1.800	20:18	1.080
0:19	.720	4:19	1.440	8:19	2.160	12:19	14.400	16:19	1.800	20:19	1.080
0:20	.720	4:20	1.440	8:20	2.160	12:20	14.400	16:20	1.800	20:20	1.080
0:21	.720	4:21	1.440	8:21	2.160	12:21	14.400	16:21	1.800	20:21	1.080
0:22	.720	4:22	1.440	8:22	2.160	12:22	14.400	16:22	1.800	20:22	1.080
0:23	.720	4:23	1.440	8:23	2.160	12:23	14.400	16:23	1.800	20:23	1.080
0:24	.720	4:24	1.440	8:24	2.160	12:24	14.400	16:24	1.800	20:24	1.080
0:25	.720	4:25	1.440	8:25	2.160	12:25	9.000	16:25	1.800	20:25	1.080
0:26	.720	4:26	1.440	8:26	2.160	12:26	9.000	16:26	1.800	20:26	1.080
0:27	.720	4:27	1.440	8:27	2.160	12:27	9.000	16:27	1.800	20:27	1.080
0:28	.720	4:28	1.440	8:28	2.160	12:28	9.000	16:28	1.800	20:28	1.080
0:29	.720	4:29	1.440	8:29	2.160	12:29	9.000	16:29	1.800	20:29	1.080
0:30	.720	4:30	1.440	8:30	2.160	12:30	9.000	16:30	1.800	20:30	1.080
0:31	.720	4:31	1.440	8:31	2.160	12:31	9.000	16:31	1.800	20:31	1.080
0:32	.720	4:32	1.440	8:32	2.160	12:32	9.000	16:32	1.800	20:32	1.080
0:33	.720	4:33	1.440	8:33	2.160	12:33	9.000	16:33	1.800	20:33	1.080
0:34	.720	4:34	1.440	8:34	2.160	12:34	9.000	16:34	1.800	20:34	1.080
0:35	.720	4:35	1.440	8:35	2.160	12:35	9.000	16:35	1.800	20:35	1.080
0:36	.720	4:36	1.440	8:36	2.160	12:36	9.000	16:36	1.800	20:36	1.080
0:37	.720	4:37	1.440	8:37	2.160	12:37	6.480	16:37	1.800	20:37	.720
0:38	.720	4:38	1.440	8:38	2.160	12:38	6.480	16:38	1.800	20:38	.720
0:39	.720	4:39	1.440	8:39	2.160	12:39	6.480	16:39	1.800	20:39	.720
0:40	.720	4:40	1.440	8:40	2.160	12:40	6.480	16:40	1.800	20:40	.720
0:41	.720	4:41	1.440	8:41	2.160	12:41	6.480	16:41	1.800	20:41	.720
0:42	.720	4:42	1.440	8:42	2.160	12:42	6.480	16:42	1.800	20:42	.720
0:43	.720	4:43	1.440	8:43	2.160	12:43	6.480	16:43	1.800	20:43	.720
0:44	.720	4:44	1.440	8:44	2.160	12:44	6.480	16:44	1.800	20:44	.720
0:45	.720	4:45	1.440	8:45	2.160	12:45	6.480	16:45	1.800	20:45	.720
0:46	.720	4:46	1.440	8:46	2.160	12:46	6.480	16:46	1.800	20:46	.720
0:47	.720	4:47	1.440	8:47	2.160	12:47	6.480	16:47	1.800	20:47	.720
0:48	.720	4:48	1.440	8:48	2.160	12:48	6.480	16:48	1.800	20:48	.720
0:49	.720	4:49	1.440	8:49	2.160	12:49	6.120	16:49	1.800	20:49	1.080
0:50	.720	4:50	1.440	8:50	2.160	12:50	6.120	16:50	1.800	20:50	1.080
0:51	.720	4:51	1.440	8:51	2.160	12:51	6.120	16:51	1.800	20:51	1.080
0:52	.720	4:52	1.440	8:52	2.160	12:52	6.120	16:52	1.800	20:52	1.080
0:53	.720	4:53	1.440	8:53	2.160	12:53	6.120	16:53	1.800	20:53	1.080
0:54	.720	4:54	1.440	8:54	2.160	12:54	6.120	16:54	1.800	20:54	1.080
0:55	.720	4:55	1.440	8:55	2.160	12:55	6.120	16:55	1.800	20:55	1.080
0:56	.720	4:56	1.440	8:56	2.160	12:56	6.120	16:56	1.800	20:56	1.080
0:57	.720	4:57	1.440	8:57	2.160	12:57	6.120	16:57	1.800	20:57	1.080
0:58	.720	4:58	1.440	8:58	2.160	12:58	6.120	16:58	1.800	20:58	1.080
0:59	.720	4:59	1.440	8:59	2.160	12:59	6.120	16:59	1.800	20:59	1.080
1:00	.720	5:00	1.440	9:00	2.160	13:00	6.120	17:00	1.800	21:00	1.080
1:01	.720	5:01	1.440	9:01	2.160	13:01	4.320	17:01	1.080	21:01	1.080
1:02	.720	5:02	1.440	9:02	2.160	13:02	4.320	17:02	1.080	21:02	1.080
1:03	.720	5:03	1.440	9:03	2.160	13:03	4.320	17:03	1.080	21:03	1.080
1:04	.720	5:04	1.440	9:04	2.160	13:04	4.320	17:04	1.080	21:04	1.080
1:05	.720	5:05	1.440	9:05	2.160	13:05	4.320	17:05	1.080	21:05	1.080
1:06	.720	5:06	1.440	9:06	2.160	13:06	4.320	17:06	1.080	21:06	1.080
1:07	.720	5:07	1.440	9:07	2.160	13:07	4.320	17:07	1.080	21:07	1.080
1:08	.720	5:08	1.440	9:08	2.160	13:08	4.320	17:08	1.080	21:08	1.080
1:09	.720	5:09	1.440	9:09	2.160	13:09	4.320	17:09	1.080	21:09	1.080
1:10	.720	5:10	1.440	9:10	2.160	13:10	4.320	17:10	1.080	21:10	1.080
1:11	.720	5:11	1.440	9:11	2.160	13:11	4.320	17:11	1.080	21:11	1.080
1:12	.720	5:12	1.440	9:12	2.160	13:12	4.320	17:12	1.080	21:12	1.080
1:13	.720	5:13	1.440	9:13	2.160	13:13	3.600	17:13	1.080	21:13	.720
1:14	.720	5:14	1.440	9:14	2.160	13:14	3.600	17:14	1.080	21:14	.720
1:15	.720	5:15	1.440	9:15	2.160	13:15	3.600	17:15	1.080	21:15	.720
1:16	.720	5:16	1.440	9:16	2.160	13:16	3.600	17:16	1.080	21:16	.720
1:17	.720	5:17	1.440	9:17	2.160	13:17	3.600	17:17	1.080	21:17	.720
1:18	.720	5:18	1.440	9:18	2.160	13:18	3.600	17:18	1.080	21:18	.720
1:19	.720	5:19	1.440	9:19	2.160	13:19	3.600	17:19	1.080	21:19	.720
1:20	.720	5:20	1.440	9:20	2.160	13:20	3.600	17:20	1.080	21:20	.720
1:21	.720	5:21	1.440	9:21	2.160	13:21	3.600	17:21	1.080	21:21	.720
1:22	.720	5:22	1.440	9:22	2.160	13:22	3.600	17:22	1.080	21:22	.720
1:23	.720	5:23	1.440	9:23	2.160	13:23	3.600	17:23	1.080	21:23	.720
1:24	.720	5:24	1.440	9:24	2.160	13:24	3.600	17:24	1.080	21:24	.720
1:25	.720	5:25	1.440	9:25	2.160	13:25	3.600	17:25	1.440	21:25	1.080
1:26	.720	5:26	1.440	9:26	2.160	13:26	3.600	17:26	1.440	21:26	1.080
1:27	.720	5:27	1.440	9:27	2.160	13:27	3.600	17:27	1.440	21:27	1.080
1:28	.720	5:28	1.440	9:28	2.160	13:28	3.600	17:28	1.440	21:28	1.080
1:29	.720	5:29	1.440	9:29	2.160	13:29	3.600	17:29	1.440	21:29	1.080
1:30	.720	5:30	1.440	9:30	2.160	13:30	3.600	17:30	1.440	21:30	1.080
1:31	.720	5:31	1.440	9:31	2.160	13:31	3.600	17:31	1.440	21:31	1.080
1:32	.720	5:32	1.440	9:32	2.160	13:32	3.600	17:32	1.440	21:32	1.080
1:33	.720	5:33	1.440	9:33	2.160	13:33	3.600	17:33	1.440	21:33	1.080
1:34	.720	5:34	1.440	9:34	2.160	13:34	3.600	17:34	1.440	21:34	1.080
1:35	.720	5:35	1.440	9:35	2.160	13:35	3.600	17:35	1.440	21:35	1.080
1:36	.720	5:36	1.440	9:36	2.160	13:36	3.600	17:36	1.440	21:36	1.080
1:37	.720	5:37	1.440	9:37	2.160	13:37	3.600	17:37	1.080	21:37	.720
1:38	.720	5:38	1.440	9:38	2.160	13:38	3.600	17:38	1.080	21:38	.720
1:39	.720	5:39	1.440	9:39	2.160	13:39	3.600	17:39	1.080	21:39	.720
1:40	.720	5:40	1.440	9:40	2.160	13:40	3.600	17:40	1.080	21:40	.720
1:41	.720	5:41	1.440	9:41	2.160	13:41	3.600	17:41	1.080	21:41	.720
1:42	.720	5:42	1.440	9:42	2.160	13:42	3.600	17:42	1.080	21:42	.720
1:43	.720	5:43	1.440	9:43	2.160	13:43	3.600	17:43	1.080	21:43	.720
1:44	.720	5:44	1.440	9:44	2.160	13:44	3.600	17:44	1.080	21:44	.720
1:45	.720	5:45	1.440	9:45	2.160	13:45	3.600	17:45	1.080	21:45	.720
1:46	.720	5:46	1.440	9:46	2.160	13:46	3.600	17:46	1.080	21:46	.720
1:47	.720	5:47	1.440	9:47	2.160	13:47	3.600	17:47	1.080	21:47	.720
1:48	.720	5:48	1.440	9:48	2.160	13:48	3.600	17:48	1.080	21:48	.720
1:49	.720	5:49	1.440	9:49	2.160	13:49	3.600	17:49	1.440	21:49	1.080
1:50	.720	5:50	1.440	9:50	2.160	13:50	3.600	17:50	1.440	21:50	1.080
1:51	.720	5:51	1.440	9:51	2.160	13:51	3.600	17:51	1.440	21:51	1.080
1:52	.720	5:52	1.440	9:52	2.160	13:52	3.600	17:52	1.440	21:52	1.080
1:53	.720	5:53	1.440	9:53	2.160	13:53	3.600	17:53	1.440	21:53	1.080
1:54	.720	5:54	1.440	9:54	2.160	13:54	3.600	17:54	1.440	21:54	1.080
1:55	.720	5:55	1.440	9:55	2.160	13:55	3.600	17:55	1.440	21:55	1.080
1:56	.720	5:56	1.440	9:56	2.160	13:56	3.600	17:56	1.440	21:56	1.080
1:57	.720	5:57	1.440	9:57	2.160	13:57	3.600	17:57	1.440	21:57	1.080
1:58	.720	5:58	1.440	9:58	2.160	13:58	3.600	17:58	1.440	21:58	1.080
1:59	.720	5:59	1.440	9:59	2.160	13:59	3.600	17:59	1.440	21:59	1.080
2:00	.720	6:00	1.440	10:00	2.160	14:00	3.600	18:00	1.440	22:00	1.080
2:01	.720	6:01	1.440	10:01	2.160	14:01	3.600	18:01	1.080	22:01	.720
2:02	.720	6:02	1.440	10:02	2.160	14:02	3.600	18:02	1.080	22:02	.720
2:03	.720	6:03	1.440	10:03	2.160	14:03	3.600	18:03	1.080	22:03	.720
2:04	.720	6:04	1.440	10:04	2.160	14:04	3.600	18:04	1.080	22:04	.720
2:05	.720	6:05	1.440	10:05	2.160	14:05	3.600	18:05	1.080	22:05	.720
2:06	.720	6:06	1.440	10:06	2.160	14:06	3.600	18:06	1.080	22:06	.720
2:07	.720	6:07	1.440	10:07	2.160	14:07	3.600	18:07	1.080	22:07	.720
2:08	.720	6:08	1.440	10:08	2.160	14:08	3.600	18:08	1.080	22:08	.720
2:09	.720	6:09	1.440	10:09	2.160	14:09	3.600	18:09	1.080	22:09	.720
2:10	.720	6:10	1.440	10:10	2.160	14:10	3.600	18:10	1.080	22:10	.720
2:11	.720	6:11	1.440	10:11	2.160	14:11	3.600	18:11	1.080	22:11	.720
2:12	.720	6:12	1.440	10:12	2.160	14:12	3.600	18:12	1.080	22:12	.720
2:13	.720	6:13	1.440	10:13	3.960	14:13	2.160	18:13	1.080	22:13	.720
2:14	.720	6:14	1.440	10:14	3.960	14:14	2.160	18:14	1.080	22:14	.720
2:15	.720	6:15	1.440	10:15	3.960	14:15	2.160	18:15	1.080	22:15	.720
2:16	.720	6:16	1.440	10:16	3.960	14:16	2.160	18:16	1.080	22:16	.720
2:17	.720	6:17	1.440	10:17	3.960	14:17	2.160	18:17	1.080	22:17	.720
2:18	.720	6:18	1.440	10:18	3.960	14:18	2.160	18:18	1.080	22:18	.720
2:19	.720	6:19	1.440	10:19	3.960	14:19	2.160	18:19	1.080	22:19	.720
2:20	.720	6:20	1.440	10:20	3.960	14:20	2.160	18:20	1.080	22:20	.720
2:21	.720	6:21	1.440	10:21	3.960	14:21	2.160	18:21	1.080	22:21	.720
2:22	.720	6:22	1.440	10:22	3.960	14:22	2.160	18:22	1.080	22:22	.720

```
01849>       2:23    .720|   6:23   1.440|  10:23   3.960|  14:23   2.160|  18:23   1.080|  22:23    .720
01850>       2:24    .720|   6:24   1.440|  10:24   3.960|  14:24   2.160|  18:24   1.080|  22:24    .720
01851>       2:25    .720|   6:25   1.440|  10:25   3.960|  14:25   2.160|  18:25   1.080|  22:25   1.080
01852>       2:26    .720|   6:26   1.440|  10:26   3.960|  14:26   2.160|  18:26   1.080|  22:26   1.080
01853>       2:27    .720|   6:27   1.440|  10:27   3.960|  14:27   2.160|  18:27   1.080|  22:27   1.080
01854>       2:28    .720|   6:28   1.440|  10:28   3.960|  14:28   2.160|  18:28   1.080|  22:28   1.080
01855>       2:29    .720|   6:29   1.440|  10:29   3.960|  14:29   2.160|  18:29   1.080|  22:29   1.080
01856>       2:30    .720|   6:30   1.440|  10:30   3.960|  14:30   2.160|  18:30   1.080|  22:30   1.080
01857>       2:31    .720|   6:31   1.440|  10:31   3.960|  14:31   2.160|  18:31   1.080|  22:31   1.080
01858>       2:32    .720|   6:32   1.440|  10:32   3.960|  14:32   2.160|  18:32   1.080|  22:32   1.080
01859>       2:33    .720|   6:33   1.440|  10:33   3.960|  14:33   2.160|  18:33   1.080|  22:33   1.080
01860>       2:34    .720|   6:34   1.440|  10:34   3.960|  14:34   2.160|  18:34   1.080|  22:34   1.080
01861>       2:35    .720|   6:35   1.440|  10:35   3.960|  14:35   2.160|  18:35   1.080|  22:35   1.080
01862>       2:36    .720|   6:36   1.440|  10:36   3.960|  14:36   2.160|  18:36   1.080|  22:36   1.080
01863>       2:37    .720|   6:37   1.440|  10:37   3.960|  14:37   2.160|  18:37   1.440|  22:37    .720
01864>       2:38    .720|   6:38   1.440|  10:38   3.960|  14:38   2.160|  18:38   1.440|  22:38    .720
01865>       2:39    .720|   6:39   1.440|  10:39   3.960|  14:39   2.160|  18:39   1.440|  22:39    .720
01866>       2:40    .720|   6:40   1.440|  10:40   3.960|  14:40   2.160|  18:40   1.440|  22:40    .720
01867>       2:41    .720|   6:41   1.440|  10:41   3.960|  14:41   2.160|  18:41   1.440|  22:41    .720
01868>       2:42    .720|   6:42   1.440|  10:42   3.960|  14:42   2.160|  18:42   1.440|  22:42    .720
01869>       2:43    .720|   6:43   1.440|  10:43   3.960|  14:43   2.160|  18:43   1.440|  22:43    .720
01870>       2:44    .720|   6:44   1.440|  10:44   3.960|  14:44   2.160|  18:44   1.440|  22:44    .720
01871>       2:45    .720|   6:45   1.440|  10:45   3.960|  14:45   2.160|  18:45   1.440|  22:45    .720
01872>       2:46    .720|   6:46   1.440|  10:46   3.960|  14:46   2.160|  18:46   1.440|  22:46    .720
01873>       2:47    .720|   6:47   1.440|  10:47   3.960|  14:47   2.160|  18:47   1.440|  22:47    .720
01874>       2:48    .720|   6:48   1.440|  10:48   3.960|  14:48   2.160|  18:48   1.440|  22:48    .720
01875>       2:49    .720|   6:49   1.440|  10:49   3.960|  14:49   2.160|  18:49   1.080|  22:49   1.080
01876>       2:50    .720|   6:50   1.440|  10:50   3.960|  14:50   2.160|  18:50   1.080|  22:50   1.080
01877>       2:51    .720|   6:51   1.440|  10:51   3.960|  14:51   2.160|  18:51   1.080|  22:51   1.080
01878>       2:52    .720|   6:52   1.440|  10:52   3.960|  14:52   2.160|  18:52   1.080|  22:52   1.080
01879>       2:53    .720|   6:53   1.440|  10:53   3.960|  14:53   2.160|  18:53   1.080|  22:53   1.080
01880>       2:54    .720|   6:54   1.440|  10:54   3.960|  14:54   2.160|  18:54   1.080|  22:54   1.080
01881>       2:55    .720|   6:55   1.440|  10:55   3.960|  14:55   2.160|  18:55   1.080|  22:55   1.080
01882>       2:56    .720|   6:56   1.440|  10:56   3.960|  14:56   2.160|  18:56   1.080|  22:56   1.080
01883>       2:57    .720|   6:57   1.440|  10:57   3.960|  14:57   2.160|  18:57   1.080|  22:57   1.080
01884>       2:58    .720|   6:58   1.440|  10:58   3.960|  14:58   2.160|  18:58   1.080|  22:58   1.080
01885>       2:59    .720|   6:59   1.440|  10:59   3.960|  14:59   2.160|  18:59   1.080|  22:59   1.080
01886>       3:00    .720|   7:00   1.440|  11:00   3.960|  15:00   2.160|  19:00   1.080|  23:00   1.080
01887>       3:01    .720|   7:01   1.440|  11:01   3.960|  15:01   2.160|  19:01   1.080|  23:01    .720
01888>       3:02    .720|   7:02   1.440|  11:02   3.960|  15:02   2.160|  19:02   1.080|  23:02    .720
01889>       3:03    .720|   7:03   1.440|  11:03   3.960|  15:03   2.160|  19:03   1.080|  23:03    .720
01890>       3:04    .720|   7:04   1.440|  11:04   3.960|  15:04   2.160|  19:04   1.080|  23:04    .720
01891>       3:05    .720|   7:05   1.440|  11:05   3.960|  15:05   2.160|  19:05   1.080|  23:05    .720
01892>       3:06    .720|   7:06   1.440|  11:06   3.960|  15:06   2.160|  19:06   1.080|  23:06    .720
01893>       3:07    .720|   7:07   1.440|  11:07   3.960|  15:07   2.160|  19:07   1.080|  23:07    .720
01894>       3:08    .720|   7:08   1.440|  11:08   3.960|  15:08   2.160|  19:08   1.080|  23:08    .720
01895>       3:09    .720|   7:09   1.440|  11:09   3.960|  15:09   2.160|  19:09   1.080|  23:09    .720
01896>       3:10    .720|   7:10   1.440|  11:10   3.960|  15:10   2.160|  19:10   1.080|  23:10    .720
01897>       3:11    .720|   7:11   1.440|  11:11   3.960|  15:11   2.160|  19:11   1.080|  23:11    .720
01898>       3:12    .720|   7:12   1.440|  11:12   3.960|  15:12   2.160|  19:12   1.080|  23:12    .720
01899>       3:13    .720|   7:13   1.440|  11:13   5.400|  15:13   1.800|  19:13   1.440|  23:13    .720
01900>       3:14    .720|   7:14   1.440|  11:14   5.400|  15:14   1.800|  19:14   1.440|  23:14    .720
01901>       3:15    .720|   7:15   1.440|  11:15   5.400|  15:15   1.800|  19:15   1.440|  23:15    .720
01902>       3:16    .720|   7:16   1.440|  11:16   5.400|  15:16   1.800|  19:16   1.440|  23:16    .720
01903>       3:17    .720|   7:17   1.440|  11:17   5.400|  15:17   1.800|  19:17   1.440|  23:17    .720
01904>       3:18    .720|   7:18   1.440|  11:18   5.400|  15:18   1.800|  19:18   1.440|  23:18    .720
01905>       3:19    .720|   7:19   1.440|  11:19   5.400|  15:19   1.800|  19:19   1.440|  23:19    .720
01906>       3:20    .720|   7:20   1.440|  11:20   5.400|  15:20   1.800|  19:20   1.440|  23:20    .720
01907>       3:21    .720|   7:21   1.440|  11:21   5.400|  15:21   1.800|  19:21   1.440|  23:21    .720
01908>       3:22    .720|   7:22   1.440|  11:22   5.400|  15:22   1.800|  19:22   1.440|  23:22    .720
01909>       3:23    .720|   7:23   1.440|  11:23   5.400|  15:23   1.800|  19:23   1.440|  23:23    .720
01910>       3:24    .720|   7:24   1.440|  11:24   5.400|  15:24   1.800|  19:24   1.440|  23:24    .720
01911>       3:25    .720|   7:25   1.440|  11:25   7.920|  15:25   1.800|  19:25   1.080|  23:25    .720
01912>       3:26    .720|   7:26   1.440|  11:26   7.920|  15:26   1.800|  19:26   1.080|  23:26    .720
01913>       3:27    .720|   7:27   1.440|  11:27   7.920|  15:27   1.800|  19:27   1.080|  23:27    .720
01914>       3:28    .720|   7:28   1.440|  11:28   7.920|  15:28   1.800|  19:28   1.080|  23:28    .720
01915>       3:29    .720|   7:29   1.440|  11:29   7.920|  15:29   1.800|  19:29   1.080|  23:29    .720
01916>       3:30    .720|   7:30   1.440|  11:30   7.920|  15:30   1.800|  19:30   1.080|  23:30    .720
01917>       3:31    .720|   7:31   1.440|  11:31   7.920|  15:31   1.800|  19:31   1.080|  23:31    .720
01918>       3:32    .720|   7:32   1.440|  11:32   7.920|  15:32   1.800|  19:32   1.080|  23:32    .720
01919>       3:33    .720|   7:33   1.440|  11:33   7.920|  15:33   1.800|  19:33   1.080|  23:33    .720
01920>       3:34    .720|   7:34   1.440|  11:34   7.920|  15:34   1.800|  19:34   1.080|  23:34    .720
01921>       3:35    .720|   7:35   1.440|  11:35   7.920|  15:35   1.800|  19:35   1.080|  23:35    .720
01922>       3:36    .720|   7:36   1.440|  11:36   7.920|  15:36   1.800|  19:36   1.080|  23:36    .720
01923>       3:37    .720|   7:37   1.440|  11:37  19.080|  15:37   1.800|  19:37   1.440|  23:37   1.080
01924>       3:38    .720|   7:38   1.440|  11:38  19.080|  15:38   1.800|  19:38   1.440|  23:38   1.080
01925>       3:39    .720|   7:39   1.440|  11:39  19.080|  15:39   1.800|  19:39   1.440|  23:39   1.080
01926>       3:40    .720|   7:40   1.440|  11:40  19.080|  15:40   1.800|  19:40   1.440|  23:40   1.080
01927>       3:41    .720|   7:41   1.440|  11:41  19.080|  15:41   1.800|  19:41   1.440|  23:41   1.080
01928>       3:42    .720|   7:42   1.440|  11:42  19.080|  15:42   1.800|  19:42   1.440|  23:42   1.080
01929>       3:43    .720|   7:43   1.440|  11:43  19.080|  15:43   1.800|  19:43   1.440|  23:43   1.080
01930>       3:44    .720|   7:44   1.440|  11:44  19.080|  15:44   1.800|  19:44   1.440|  23:44   1.080
01931>       3:45    .720|   7:45   1.440|  11:45  19.080|  15:45   1.800|  19:45   1.440|  23:45   1.080
01932>       3:46    .720|   7:46   1.440|  11:46  19.080|  15:46   1.800|  19:46   1.440|  23:46   1.080
01933>       3:47    .720|   7:47   1.440|  11:47  19.080|  15:47   1.800|  19:47   1.440|  23:47   1.080
01934>       3:48    .720|   7:48   1.440|  11:48  19.080|  15:48   1.800|  19:48   1.440|  23:48   1.080
01935>       3:49    .720|   7:49   1.440|  11:49  39.600|  15:49   1.800|  19:49   1.080|  23:49   1.440
01936>       3:50    .720|   7:50   1.440|  11:50  39.600|  15:50   1.800|  19:50   1.080|  23:50   1.440
01937>       3:51    .720|   7:51   1.440|  11:51  39.600|  15:51   1.800|  19:51   1.080|  23:51   1.440
01938>       3:52    .720|   7:52   1.440|  11:52  39.600|  15:52   1.800|  19:52   1.080|  23:52   1.440
01939>       3:53    .720|   7:53   1.440|  11:53  39.600|  15:53   1.800|  19:53   1.080|  23:53   1.440
01940>       3:54    .720|   7:54   1.440|  11:54  39.600|  15:54   1.800|  19:54   1.080|  23:54   1.440
01941>       3:55    .720|   7:55   1.440|  11:55  39.600|  15:55   1.800|  19:55   1.080|  23:55   1.440
01942>       3:56    .720|   7:56   1.440|  11:56  39.600|  15:56   1.800|  19:56   1.080|  23:56   1.440
01943>       3:57    .720|   7:57   1.440|  11:57  39.600|  15:57   1.800|  19:57   1.080|  23:57   1.440
01944>       3:58    .720|   7:58   1.440|  11:58  39.600|  15:58   1.800|  19:58   1.080|  23:58   1.440
01945>       3:59    .720|   7:59   1.440|  11:59  39.600|  15:59   1.800|  19:59   1.080|  23:59   1.440
01946>       4:00    .720|   8:00   1.440|  12:00  39.600|  16:00   1.800|  20:00   1.080|  24:00   1.440
01947>
01948> ------------------------------------------------------------------------------------------------------------
01949> R0001:C00036-------------------------------------------------------------------------------------------------
01950> *#-----------------|-------------------------------------------------------|
01951> *#-----------------|---------------------EXISTING--------------------------|
01952> -------------------------
01953> | CALIB NASHYD           |   Area     (ha)=    2.390   Curve Number   (CN)= 60.30
01954> | 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
01955> -------------------------   U.H. Tp(hrs)=     .410
01956>
01957>      Unit Hyd Qpeak  (cms)=     .223
01958>
01959>      PEAK FLOW       (cms)=     .064 (i)
01960>      TIME TO PEAK    (hrs)=   12.533
01961>      DURATION        (hrs)=   26.783, (dddd|hh:mm:)=   1|02:47
01962>      AVERAGE FLOW    (cms)=     .005
01963>      RUNOFF VOLUME    (mm)=   18.338
01964>      TOTAL RAINFALL   (mm)=   72.000
01965>      RUNOFF COEFFICIENT   =     .255
01966>
01967>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01968>
01969> ------------------------------------------------------------------------------------------------------------
01970> R0001:C00037-------------------------------------------------------------------------------------------------
01971> *#-----------------|---------------------PROPOSED--------------------------|
01972> -------------------------
01973> | CALIB STANDHYD         |   Area     (ha)=    3.89
01974> | 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
01975> -------------------------
01976>                             IMPERVIOUS    PERVIOUS (i)
01977>      Surface Area      (ha)=       1.88         2.01
01978>      Dep. Storage      (mm)=       2.00         5.00
01979>      Average Slope      (%)=       2.00         2.00
01980>      Length             (m)=     100.00        35.00
01981>      Mannings n             =       .013         .250
01982>
01983>      Max.eff.Inten.(mm/hr)=      81.00        34.44
01984>                  over (min)=       2.00        12.00
01985>      Storage Coeff.  (min)=       2.26 (ii)    12.24 (ii)
01986>      Unit Hyd. Tpeak (min)=       2.00        12.00
01987>      Unit Hyd. peak  (cms)=        .52          .09
01988>                                                          *TOTALS*
01989>      PEAK FLOW       (cms)=        .23          .12          .327 (iii)
01990>      TIME TO PEAK    (hrs)=      12.20        12.32        12.200
01991>      RUNOFF VOLUME    (mm)=      70.00        18.50        32.046
01992>      TOTAL RAINFALL   (mm)=      72.00        72.00        72.000
01993>      RUNOFF COEFFICIENT   =        .97          .26          .445
01994>
01995>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01996>            CN* =  49.0    Ia = Dep. Storage  (Above)
01997>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01998>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01999>
02000> ------------------------------------------------------------------------------------------------------------
02001> R0001:C00038-------------------------------------------------------------------------------------------------
02002> *#-----------------|-------------------------------------------------------|
02003> *#-----------------|---------------------POND------------------------------|
02004> ----------------------
02005> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
02006> |  IN>01:201          |
02007> | OUT<02:POND         | ========================  OUTFLOW STORAGE TABLE  ========================
02008> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
02009>                          (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
02010>                          .000 .0000E+00|   .017 .5900E-01|   .022 .1280E+00|   .667 .2070E+00
02011>                          .009 .1500E-01|   .019 .9200E-01|   .098 .1660E+00|  1.958 .2510E+00
02012>                          .013 .3300E-01|   .022 .1280E+00|   .667 .2070E+00|   .000 .0000E+00
02013>
02014>     ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
02015>     ---------------           (ha)      (cms)     (hrs)      (mm)
02016>     INFLOW > 01:201           3.890      .327    12.200     32.046
02017>    OUTFLOW < 02:POND          3.890      .018    14.300     32.046
02018>   OVERFLOW < 03:POND OUT       .000      .000      .000       .000
02019>
02020>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
02021>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
02022>                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .00
02023>
02024>
02025>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    5.431
02026>                    TIME SHIFT OF PEAK FLOW       (min)=   126.00
02027>                    MAXIMUM  STORAGE   USED        (ha.m.)=.7138E-01
02028>
02029> ------------------------------------------------------------------------------------------------------------
02030> R0001:C00039-------------------------------------------------------------------------------------------------
02031> *#-----------------|-------------------------------------------------------|
02032> *#-----------------|-------------------------------------------------------|
02033> -------------------------
02034> | CALIB STANDHYD         |   Area     (ha)=     .35
02035> | 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
02036> -------------------------
02037>                             IMPERVIOUS    PERVIOUS (i)
02038>      Surface Area      (ha)=        .15          .20
02039>      Dep. Storage      (mm)=       2.00         5.00
02040>      Average Slope      (%)=       2.00         2.00
02041>      Length             (m)=     100.00        35.00
02042>      Mannings n             =       .013         .250
02043>
02044>      Max.eff.Inten.(mm/hr)=      81.00        46.23
02045>                  over (min)=       2.00        11.00
02046>      Storage Coeff.  (min)=       2.26 (ii)    11.13 (ii)
02047>      Unit Hyd. Tpeak (min)=       2.00        11.00
02048>      Unit Hyd. peak  (cms)=        .52          .10
02049>                                                          *TOTALS*
02050>      PEAK FLOW       (cms)=        .00          .02          .018 (iii)
02051>      TIME TO PEAK    (hrs)=      12.20        12.30        12.283
02052>      RUNOFF VOLUME    (mm)=      70.00        20.92        22.296
02053>      TOTAL RAINFALL   (mm)=      72.00        72.00        72.000
02054>      RUNOFF COEFFICIENT   =        .97          .29          .310
02055>
02056>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02057>            CN* =  49.0    Ia = Dep. Storage  (Above)
02058>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02059>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02060>
02061> ------------------------------------------------------------------------------------------------------------
02062> R0001:C00040-------------------------------------------------------------------------------------------------
02063> *#-----------------|-------------------------------------------------------|
02064> -------------------------
02065> | CALIB STANDHYD         |   Area     (ha)=     .17
02066> | 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
02067> -------------------------
02068>                             IMPERVIOUS    PERVIOUS (i)
02069>      Surface Area      (ha)=        .07          .10
02070>      Dep. Storage      (mm)=       2.00         5.00
02071>      Average Slope      (%)=       2.00         2.00
02072>      Length             (m)=     100.00        35.00
02073>      Mannings n             =       .013         .250
02074>
02075>      Max.eff.Inten.(mm/hr)=      81.00        46.11
02076>                  over (min)=       2.00        11.00
02077>      Storage Coeff.  (min)=       2.26 (ii)    11.14 (ii)
02078>      Unit Hyd. Tpeak (min)=       2.00        11.00
02079>      Unit Hyd. peak  (cms)=        .79          .10
02080>                                                          *TOTALS*
02081>      PEAK FLOW       (cms)=        .00          .01          .009 (iii)
02082>      TIME TO PEAK    (hrs)=      12.05        12.30        12.300
02083>      RUNOFF VOLUME    (mm)=      70.00        20.90        20.949
02084>      TOTAL RAINFALL   (mm)=      72.00        72.00        72.000
02085>      RUNOFF COEFFICIENT   =        .97          .29          .291
02086>
02087>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02088>            CN* =  49.0    Ia = Dep. Storage  (Above)
02089>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02090>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02091>
02092> ------------------------------------------------------------------------------------------------------------
02093> R0001:C00041-------------------------------------------------------------------------------------------------
02094> ----------------------
02095> | ADD HYD              |
02096> | 06:CULVERT           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
02097> ----------------------    (ha)     (cms)    (hrs)      (mm)    (cms)
02098>                          ID 1 02:POND          3.890      .018   14.300     32.046    .000
02099>                        +ID 2 03:POND OUT       .000      .000     .000       .000    .000  **DRY**
02100>                        +ID 3 04:202            .350      .018   12.283     22.296    .000
02101>                        +ID 4 05:203            .170      .009   12.300     20.949    .000
02102>                        ========================================================================
02103>                        SUM   06:CULVERT       4.410      .042   12.300     30.845    .000
02104>
02105>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
02106>
02107> ------------------------------------------------------------------------------------------------------------
02108> R0001:C00042-------------------------------------------------------------------------------------------------
02109> *#-----------------|-------------------------------------------------------|
02110> *#-----------------|-------------------------------------------------------|
02111> *#-----------------|---------------------PROPOSED--------------------------|
02112> -------------------------
02113> | CALIB STANDHYD         |   Area     (ha)=     .12
02114> | 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
02115> -------------------------
02116>                             IMPERVIOUS    PERVIOUS (i)
02117>      Surface Area      (ha)=        .05          .07
02118>      Dep. Storage      (mm)=       2.00         5.00
02119>      Average Slope      (%)=       2.00         2.00
02120>      Length             (m)=     100.00        35.00
02121>      Mannings n             =       .013         .250
02122>
02123>      Max.eff.Inten.(mm/hr)=      81.00        46.23
02124>                  over (min)=       2.00        11.00
02125>      Storage Coeff.  (min)=       2.26 (ii)    11.13 (ii)
02126>      Unit Hyd. Tpeak (min)=       2.00        11.00
02127>      Unit Hyd. peak  (cms)=        .52          .10
02128>                                                          *TOTALS*
02129>      PEAK FLOW       (cms)=        .00          .01          .006 (iii)
02130>      TIME TO PEAK    (hrs)=      12.17        12.30        12.283
02131>      RUNOFF VOLUME    (mm)=      70.00        20.92        22.787
02132>      TOTAL RAINFALL   (mm)=      72.00        72.00        72.000
02133>      RUNOFF COEFFICIENT   =        .97          .29          .316
02134>
02135>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02136>            CN* =  49.0    Ia = Dep. Storage  (Above)
02137>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02138>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02139>
02140> ------------------------------------------------------------------------------------------------------------
02141> R0001:C00043-------------------------------------------------------------------------------------------------
02142> *#-----------------|---------------------PROPOSED--------------------------|
02143> -------------------------
02144> | CALIB STANDHYD         |   Area     (ha)=     .12
02145> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
02146> -------------------------
02147>                             IMPERVIOUS    PERVIOUS (i)
02148>      Surface Area      (ha)=        .06          .06
02149>      Dep. Storage      (mm)=       2.00         5.00
02150>      Average Slope      (%)=       2.00         2.00
02151>      Length             (m)=     100.00        35.00
02152>      Mannings n             =       .013         .250
02153>
02154>      Max.eff.Inten.(mm/hr)=      81.00        14.79
02155>                  over (min)=       2.00        16.00
02156>      Storage Coeff.  (min)=       2.26 (ii)    16.25 (ii)
```

```
     Unit Hyd. Tpeak (min)=       2.00        16.00
     Unit Hyd. peak  (cms)=        .52          .07
                                                          *TOTALS*
     PEAK FLOW       (cms)=        .01          .00         .014 (iii)
     TIME TO PEAK    (hrs)=      12.20        12.38       12.200
     RUNOFF VOLUME    (mm)=      70.00        13.55       40.814
     TOTAL RAINFALL   (mm)=      72.00        72.00       72.000
     RUNOFF COEFFICIENT   =        .97          .19         .567

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 --------------------------------------------------------------------------------------------
 R0001:C00044---------------------------------------------------------------------------------
 *#-----------------|---------------------EXISTING-----------------------------|
 -------------------------
 | CALIB NASHYD           |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
 | 07:102        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
 -------------------------    U.H. Tp(hrs)=     .440

     Unit Hyd Qpeak  (cms)=     .257

     PEAK FLOW       (cms)=     .076 (i)
     TIME TO PEAK    (hrs)=   12.567
     DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
     AVERAGE FLOW    (cms)=     .006
     RUNOFF VOLUME    (mm)=   18.338
     TOTAL RAINFALL   (mm)=   72.000
     RUNOFF COEFFICIENT   =     .255

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

 --------------------------------------------------------------------------------------------
 R0001:C00045---------------------------------------------------------------------------------
 *#-----------------|---------------------PROPOSED-----------------------------|
 -------------------------
 | CALIB STANDHYD         |   Area    (ha)=     .55
 | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
 -------------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .21          .34
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     100.00        35.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=      81.00        42.62
                over (min)       2.00        11.00
     Storage Coeff.  (min)=       2.26 (ii)   11.42 (ii)
     Unit Hyd. Tpeak (min)=       2.00        11.00
     Unit Hyd. peak  (cms)=        .60          .10
                                                          *TOTALS*
     PEAK FLOW       (cms)=        .00          .03         .027 (iii)
     TIME TO PEAK    (hrs)=      12.08        12.30       12.300
     RUNOFF VOLUME    (mm)=      70.00        20.20       20.247
     TOTAL RAINFALL   (mm)=      72.00        72.00       72.000
     RUNOFF COEFFICIENT   =        .97          .28         .281

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  49.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 --------------------------------------------------------------------------------------------
 R0001:C00046---------------------------------------------------------------------------------
 *#*************************************************************************
 *#                             5-YEAR, 4 HOUR CHICAGO STORM
 *#*************************************************************************
 *#-----------------|-------------------------------------------------------|
 --------------------
 | MASS STORM        |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
 | Ptotal= 62.40 mm  |    Comments: 24 hour SCS II storm mass curve
 --------------------
                          Duration of storm         =   24.00 hrs
                          Mass curve time step      =   12.00 min
                          Selected storm time step  =    1.00 min
                          Volume of derived storm   =   62.40 mm
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hh:mm	mm/hr	hh:mm	mm/hr	hh:mm	mm/hr	hh:mm	mm/hr	hh:mm	mm/hr	hh:mm	mm/hr
0:01	.000	4:01	.624	8:01	1.248	12:01	70.200	16:01	1.560	20:01	1.248
0:02	.000	4:02	.624	8:02	1.248	12:02	70.200	16:02	1.560	20:02	1.248
0:03	.000	4:03	.624	8:03	1.248	12:03	70.200	16:03	1.560	20:03	1.248
0:04	.000	4:04	.624	8:04	1.248	12:04	70.200	16:04	1.560	20:04	1.248
0:05	.000	4:05	.624	8:05	1.248	12:05	70.200	16:05	1.560	20:05	1.248
0:06	.000	4:06	.624	8:06	1.248	12:06	70.200	16:06	1.560	20:06	1.248
0:07	.000	4:07	.624	8:07	1.248	12:07	70.200	16:07	1.560	20:07	1.248
0:08	.000	4:08	.624	8:08	1.248	12:08	70.200	16:08	1.560	20:08	1.248
0:09	.000	4:09	.624	8:09	1.248	12:09	70.200	16:09	1.560	20:09	1.248
0:10	.000	4:10	.624	8:10	1.248	12:10	70.200	16:10	1.560	20:10	1.248
0:11	.000	4:11	.624	8:11	1.248	12:11	70.200	16:11	1.560	20:11	1.248
0:12	.000	4:12	.624	8:12	1.248	12:12	70.200	16:12	1.560	20:12	1.248
0:13	.624	4:13	1.248	8:13	1.872	12:13	12.480	16:13	1.560	20:13	.936
0:14	.624	4:14	1.248	8:14	1.872	12:14	12.480	16:14	1.560	20:14	.936
0:15	.624	4:15	1.248	8:15	1.872	12:15	12.480	16:15	1.560	20:15	.936
0:16	.624	4:16	1.248	8:16	1.872	12:16	12.480	16:16	1.560	20:16	.936
0:17	.624	4:17	1.248	8:17	1.872	12:17	12.480	16:17	1.560	20:17	.936
0:18	.624	4:18	1.248	8:18	1.872	12:18	12.480	16:18	1.560	20:18	.936
0:19	.624	4:19	1.248	8:19	1.872	12:19	12.480	16:19	1.560	20:19	.936
0:20	.624	4:20	1.248	8:20	1.872	12:20	12.480	16:20	1.560	20:20	.936
0:21	.624	4:21	1.248	8:21	1.872	12:21	12.480	16:21	1.560	20:21	.936
0:22	.624	4:22	1.248	8:22	1.872	12:22	12.480	16:22	1.560	20:22	.936
0:23	.624	4:23	1.248	8:23	1.872	12:23	12.480	16:23	1.560	20:23	.936
0:24	.624	4:24	1.248	8:24	1.872	12:24	12.480	16:24	1.560	20:24	.936
0:25	.624	4:25	1.248	8:25	1.872	12:25	7.800	16:25	1.560	20:25	.936
0:26	.624	4:26	1.248	8:26	1.872	12:26	7.800	16:26	1.560	20:26	.936
0:27	.624	4:27	1.248	8:27	1.872	12:27	7.800	16:27	1.560	20:27	.936
0:28	.624	4:28	1.248	8:28	1.872	12:28	7.800	16:28	1.560	20:28	.936
0:29	.624	4:29	1.248	8:29	1.872	12:29	7.800	16:29	1.560	20:29	.936
0:30	.624	4:30	1.248	8:30	1.872	12:30	7.800	16:30	1.560	20:30	.936
0:31	.624	4:31	1.248	8:31	1.872	12:31	7.800	16:31	1.560	20:31	.936
0:32	.624	4:32	1.248	8:32	1.872	12:32	7.800	16:32	1.560	20:32	.936
0:33	.624	4:33	1.248	8:33	1.872	12:33	7.800	16:33	1.560	20:33	.936
0:34	.624	4:34	1.248	8:34	1.872	12:34	7.800	16:34	1.560	20:34	.936
0:35	.624	4:35	1.248	8:35	1.872	12:35	7.800	16:35	1.560	20:35	.936
0:36	.624	4:36	1.248	8:36	1.872	12:36	7.800	16:36	1.560	20:36	.936
0:37	.624	4:37	1.248	8:37	1.872	12:37	5.616	16:37	1.560	20:37	.624
0:38	.624	4:38	1.248	8:38	1.872	12:38	5.616	16:38	1.560	20:38	.624
0:39	.624	4:39	1.248	8:39	1.872	12:39	5.616	16:39	1.560	20:39	.624
0:40	.624	4:40	1.248	8:40	1.872	12:40	5.616	16:40	1.560	20:40	.624
0:41	.624	4:41	1.248	8:41	1.872	12:41	5.616	16:41	1.560	20:41	.624
0:42	.624	4:42	1.248	8:42	1.872	12:42	5.616	16:42	1.560	20:42	.624
0:43	.624	4:43	1.248	8:43	1.872	12:43	5.616	16:43	1.560	20:43	.624
0:44	.624	4:44	1.248	8:44	1.872	12:44	5.616	16:44	1.560	20:44	.624
0:45	.624	4:45	1.248	8:45	1.872	12:45	5.616	16:45	1.560	20:45	.624
0:46	.624	4:46	1.248	8:46	1.872	12:46	5.616	16:46	1.560	20:46	.624
0:47	.624	4:47	1.248	8:47	1.872	12:47	5.616	16:47	1.560	20:47	.624
0:48	.624	4:48	1.248	8:48	1.872	12:48	5.616	16:48	1.560	20:48	.624
0:49	.624	4:49	1.248	8:49	1.872	12:49	5.304	16:49	1.560	20:49	.936
0:50	.624	4:50	1.248	8:50	1.872	12:50	5.304	16:50	1.560	20:50	.936
0:51	.624	4:51	1.248	8:51	1.872	12:51	5.304	16:51	1.560	20:51	.936
0:52	.624	4:52	1.248	8:52	1.872	12:52	5.304	16:52	1.560	20:52	.936
0:53	.624	4:53	1.248	8:53	1.872	12:53	5.304	16:53	1.560	20:53	.936
0:54	.624	4:54	1.248	8:54	1.872	12:54	5.304	16:54	1.560	20:54	.936
0:55	.624	4:55	1.248	8:55	1.872	12:55	5.304	16:55	1.560	20:55	.936
0:56	.624	4:56	1.248	8:56	1.872	12:56	5.304	16:56	1.560	20:56	.936
0:57	.624	4:57	1.248	8:57	1.872	12:57	5.304	16:57	1.560	20:57	.936
0:58	.624	4:58	1.248	8:58	1.872	12:58	5.304	16:58	1.560	20:58	.936
0:59	.624	4:59	1.248	8:59	1.872	12:59	5.304	16:59	1.560	20:59	.936
1:00	.624	5:00	1.248	9:00	1.872	13:00	5.304	17:00	1.560	21:00	.936
1:01	.624	5:01	1.248	9:01	1.872	13:01	3.744	17:01	.936	21:01	.936
1:02	.624	5:02	1.248	9:02	1.872	13:02	3.744	17:02	.936	21:02	.936
1:03	.624	5:03	1.248	9:03	1.872	13:03	3.744	17:03	.936	21:03	.936
1:04	.624	5:04	1.248	9:04	1.872	13:04	3.744	17:04	.936	21:04	.936
1:05	.624	5:05	1.248	9:05	1.872	13:05	3.744	17:05	.936	21:05	.936
1:06	.624	5:06	1.248	9:06	1.872	13:06	3.744	17:06	.936	21:06	.936
1:07	.624	5:07	1.248	9:07	1.872	13:07	3.744	17:07	.936	21:07	.936
1:08	.624	5:08	1.248	9:08	1.872	13:08	3.744	17:08	.936	21:08	.936
1:09	.624	5:09	1.248	9:09	1.872	13:09	3.744	17:09	.936	21:09	.936
1:10	.624	5:10	1.248	9:10	1.872	13:10	3.744	17:10	.936	21:10	.936
1:11	.624	5:11	1.248	9:11	1.872	13:11	3.744	17:11	.936	21:11	.936
1:12	.624	5:12	1.248	9:12	1.872	13:12	3.744	17:12	.936	21:12	.936
1:13	.624	5:13	1.248	9:13	1.872	13:13	3.120	17:13	.936	21:13	.624
1:14	.624	5:14	1.248	9:14	1.872	13:14	3.120	17:14	.936	21:14	.624
1:15	.624	5:15	1.248	9:15	1.872	13:15	3.120	17:15	.936	21:15	.624
1:16	.624	5:16	1.248	9:16	1.872	13:16	3.120	17:16	.936	21:16	.624
1:17	.624	5:17	1.248	9:17	1.872	13:17	3.120	17:17	.936	21:17	.624
1:18	.624	5:18	1.248	9:18	1.872	13:18	3.120	17:18	.936	21:18	.624
1:19	.624	5:19	1.248	9:19	1.872	13:19	3.120	17:19	.936	21:19	.624
1:20	.624	5:20	1.248	9:20	1.872	13:20	3.120	17:20	.936	21:20	.624
1:21	.624	5:21	1.248	9:21	1.872	13:21	3.120	17:21	.936	21:21	.624
1:22	.624	5:22	1.248	9:22	1.872	13:22	3.120	17:22	.936	21:22	.624
1:23	.624	5:23	1.248	9:23	1.872	13:23	3.120	17:23	.936	21:23	.624
1:24	.624	5:24	1.248	9:24	1.872	13:24	3.120	17:24	.936	21:24	.624
1:25	.624	5:25	1.248	9:25	1.872	13:25	3.120	17:25	1.248	21:25	.936
1:26	.624	5:26	1.248	9:26	1.872	13:26	3.120	17:26	1.248	21:26	.936
1:27	.624	5:27	1.248	9:27	1.872	13:27	3.120	17:27	1.248	21:27	.936
1:28	.624	5:28	1.248	9:28	1.872	13:28	3.120	17:28	1.248	21:28	.936
1:29	.624	5:29	1.248	9:29	1.872	13:29	3.120	17:29	1.248	21:29	.936
1:30	.624	5:30	1.248	9:30	1.872	13:30	3.120	17:30	1.248	21:30	.936
1:31	.624	5:31	1.248	9:31	1.872	13:31	3.120	17:31	1.248	21:31	.936
1:32	.624	5:32	1.248	9:32	1.872	13:32	3.120	17:32	1.248	21:32	.936
1:33	.624	5:33	1.248	9:33	1.872	13:33	3.120	17:33	1.248	21:33	.936
1:34	.624	5:34	1.248	9:34	1.872	13:34	3.120	17:34	1.248	21:34	.936
1:35	.624	5:35	1.248	9:35	1.872	13:35	3.120	17:35	1.248	21:35	.936
1:36	.624	5:36	1.248	9:36	1.872	13:36	3.120	17:36	1.248	21:36	.936
1:37	.624	5:37	1.248	9:37	1.872	13:37	3.120	17:37	.936	21:37	.624
1:38	.624	5:38	1.248	9:38	1.872	13:38	3.120	17:38	.936	21:38	.624
1:39	.624	5:39	1.248	9:39	1.872	13:39	3.120	17:39	.936	21:39	.624
1:40	.624	5:40	1.248	9:40	1.872	13:40	3.120	17:40	.936	21:40	.624
1:41	.624	5:41	1.248	9:41	1.872	13:41	3.120	17:41	.936	21:41	.624
1:42	.624	5:42	1.248	9:42	1.872	13:42	3.120	17:42	.936	21:42	.624
1:43	.624	5:43	1.248	9:43	1.872	13:43	3.120	17:43	.936	21:43	.624
1:44	.624	5:44	1.248	9:44	1.872	13:44	3.120	17:44	.936	21:44	.624
1:45	.624	5:45	1.248	9:45	1.872	13:45	3.120	17:45	.936	21:45	.624
1:46	.624	5:46	1.248	9:46	1.872	13:46	3.120	17:46	.936	21:46	.624
1:47	.624	5:47	1.248	9:47	1.872	13:47	3.120	17:47	.936	21:47	.624
1:48	.624	5:48	1.248	9:48	1.872	13:48	3.120	17:48	.936	21:48	.624
1:49	.624	5:49	1.248	9:49	1.872	13:49	3.120	17:49	1.248	21:49	.936
1:50	.624	5:50	1.248	9:50	1.872	13:50	3.120	17:50	1.248	21:50	.936
1:51	.624	5:51	1.248	9:51	1.872	13:51	3.120	17:51	1.248	21:51	.936
1:52	.624	5:52	1.248	9:52	1.872	13:52	3.120	17:52	1.248	21:52	.936
1:53	.624	5:53	1.248	9:53	1.872	13:53	3.120	17:53	1.248	21:53	.936
1:54	.624	5:54	1.248	9:54	1.872	13:54	3.120	17:54	1.248	21:54	.936
1:55	.624	5:55	1.248	9:55	1.872	13:55	3.120	17:55	1.248	21:55	.936
1:56	.624	5:56	1.248	9:56	1.872	13:56	3.120	17:56	1.248	21:56	.936
1:57	.624	5:57	1.248	9:57	1.872	13:57	3.120	17:57	1.248	21:57	.936
1:58	.624	5:58	1.248	9:58	1.872	13:58	3.120	17:58	1.248	21:58	.936
1:59	.624	5:59	1.248	9:59	1.872	13:59	3.120	17:59	1.248	21:59	.936
2:00	.624	6:00	1.248	10:00	1.872	14:00	3.120	18:00	1.248	22:00	.936
2:01	.624	6:01	1.248	10:01	1.872	14:01	3.120	18:01	.936	22:01	.624
2:02	.624	6:02	1.248	10:02	1.872	14:02	3.120	18:02	.936	22:02	.624
2:03	.624	6:03	1.248	10:03	1.872	14:03	3.120	18:03	.936	22:03	.624
2:04	.624	6:04	1.248	10:04	1.872	14:04	3.120	18:04	.936	22:04	.624
2:05	.624	6:05	1.248	10:05	1.872	14:05	3.120	18:05	.936	22:05	.624
2:06	.624	6:06	1.248	10:06	1.872	14:06	3.120	18:06	.936	22:06	.624
2:07	.624	6:07	1.248	10:07	1.872	14:07	3.120	18:07	.936	22:07	.624
2:08	.624	6:08	1.248	10:08	1.872	14:08	3.120	18:08	.936	22:08	.624
2:09	.624	6:09	1.248	10:09	1.872	14:09	3.120	18:09	.936	22:09	.624
2:10	.624	6:10	1.248	10:10	1.872	14:10	3.120	18:10	.936	22:10	.624
2:11	.624	6:11	1.248	10:11	1.872	14:11	3.120	18:11	.936	22:11	.624
2:12	.624	6:12	1.248	10:12	1.872	14:12	3.120	18:12	.936	22:12	.624
2:13	.624	6:13	1.248	10:13	3.432	14:13	1.872	18:13	.936	22:13	.624
2:14	.624	6:14	1.248	10:14	3.432	14:14	1.872	18:14	.936	22:14	.624
2:15	.624	6:15	1.248	10:15	3.432	14:15	1.872	18:15	.936	22:15	.624
2:16	.624	6:16	1.248	10:16	3.432	14:16	1.872	18:16	.936	22:16	.624
2:17	.624	6:17	1.248	10:17	3.432	14:17	1.872	18:17	.936	22:17	.624
2:18	.624	6:18	1.248	10:18	3.432	14:18	1.872	18:18	.936	22:18	.624
2:19	.624	6:19	1.248	10:19	3.432	14:19	1.872	18:19	.936	22:19	.624
2:20	.624	6:20	1.248	10:20	3.432	14:20	1.872	18:20	.936	22:20	.624
2:21	.624	6:21	1.248	10:21	3.432	14:21	1.872	18:21	.936	22:21	.624
2:22	.624	6:22	1.248	10:22	3.432	14:22	1.872	18:22	.936	22:22	.624
2:23	.624	6:23	1.248	10:23	3.432	14:23	1.872	18:23	.936	22:23	.624
2:24	.624	6:24	1.248	10:24	3.432	14:24	1.872	18:24	.936	22:24	.624
2:25	.624	6:25	1.248	10:25	3.432	14:25	1.872	18:25	.936	22:25	.936
2:26	.624	6:26	1.248	10:26	3.432	14:26	1.872	18:26	.936	22:26	.936
2:27	.624	6:27	1.248	10:27	3.432	14:27	1.872	18:27	.936	22:27	.936
2:28	.624	6:28	1.248	10:28	3.432	14:28	1.872	18:28	.936	22:28	.936
2:29	.624	6:29	1.248	10:29	3.432	14:29	1.872	18:29	.936	22:29	.936
2:30	.624	6:30	1.248	10:30	3.432	14:30	1.872	18:30	.936	22:30	.936
2:31	.624	6:31	1.248	10:31	3.432	14:31	1.872	18:31	.936	22:31	.936
2:32	.624	6:32	1.248	10:32	3.432	14:32	1.872	18:32	.936	22:32	.936
2:33	.624	6:33	1.248	10:33	3.432	14:33	1.872	18:33	.936	22:33	.936
2:34	.624	6:34	1.248	10:34	3.432	14:34	1.872	18:34	.936	22:34	.936
2:35	.624	6:35	1.248	10:35	3.432	14:35	1.872	18:35	.936	22:35	.936
2:36	.624	6:36	1.248	10:36	3.432	14:36	1.872	18:36	.936	22:36	.936
2:37	.624	6:37	1.248	10:37	3.432	14:37	1.872	18:37	1.248	22:37	.624
2:38	.624	6:38	1.248	10:38	3.432	14:38	1.872	18:38	1.248	22:38	.624
2:39	.624	6:39	1.248	10:39	3.432	14:39	1.872	18:39	1.248	22:39	.624
2:40	.624	6:40	1.248	10:40	3.432	14:40	1.872	18:40	1.248	22:40	.624
2:41	.624	6:41	1.248	10:41	3.432	14:41	1.872	18:41	1.248	22:41	.624
2:42	.624	6:42	1.248	10:42	3.432	14:42	1.872	18:42	1.248	22:42	.624
2:43	.624	6:43	1.248	10:43	3.432	14:43	1.872	18:43	1.248	22:43	.624
2:44	.624	6:44	1.248	10:44	3.432	14:44	1.872	18:44	1.248	22:44	.624
2:45	.624	6:45	1.248	10:45	3.432	14:45	1.872	18:45	1.248	22:45	.624
2:46	.624	6:46	1.248	10:46	3.432	14:46	1.872	18:46	1.248	22:46	.624
2:47	.624	6:47	1.248	10:47	3.432	14:47	1.872	18:47	1.248	22:47	.624
2:48	.624	6:48	1.248	10:48	3.432	14:48	1.872	18:48	1.248	22:48	.624
2:49	.624	6:49	1.248	10:49	3.432	14:49	1.872	18:49	.936	22:49	.936
2:50	.624	6:50	1.248	10:50	3.432	14:50	1.872	18:50	.936	22:50	.936
2:51	.624	6:51	1.248	10:51	3.432	14:51	1.872	18:51	.936	22:51	.936
2:52	.624	6:52	1.248	10:52	3.432	14:52	1.872	18:52	.936	22:52	.936
2:53	.624	6:53	1.248	10:53	3.432	14:53	1.872	18:53	.936	22:53	.936
2:54	.624	6:54	1.248	10:54	3.432	14:54	1.872	18:54	.936	22:54	.936
2:55	.624	6:55	1.248	10:55	3.432	14:55	1.872	18:55	.936	22:55	.936
2:56	.624	6:56	1.248	10:56	3.432	14:56	1.872	18:56	.936	22:56	.936
2:57	.624	6:57	1.248	10:57	3.432	14:57	1.872	18:57	.936	22:57	.936
2:58	.624	6:58	1.248	10:58	3.432	14:58	1.872	18:58	.936	22:58	.936
2:59	.624	6:59	1.248	10:59	3.432	14:59	1.872	18:59	.936	22:59	.936
3:00	.624	7:00	1.248	11:00	3.432	15:00	1.872	19:00	.936	23:00	.936
3:01	.624	7:01	1.248	11:01	3.432	15:01	1.872	19:01	.936	23:01	.624
3:02	.624	7:02	1.248	11:02	3.432	15:02	1.872	19:02	.936	23:02	.624
3:03	.624	7:03	1.248	11:03	3.432	15:03	1.872	19:03	.936	23:03	.624
3:04	.624	7:04	1.248	11:04	3.432	15:04	1.872	19:04	.936	23:04	.624
3:05	.624	7:05	1.248	11:05	3.432	15:05	1.872	19:05	.936	23:05	.624
3:06	.624	7:06	1.248	11:06	3.432	15:06	1.872	19:06	.936	23:06	.624
3:07	.624	7:07	1.248	11:07	3.432	15:07	1.872	19:07	.936	23:07	.624
3:08	.624	7:08	1.248	11:08	3.432	15:08	1.872	19:08	.936	23:08	.624
3:09	.624	7:09	1.248	11:09	3.432	15:09	1.872	19:09	.936	23:09	.624
3:10	.624	7:10	1.248	11:10	3.432	15:10	1.872	19:10	.936	23:10	.624
3:11	.624	7:11	1.248	11:11	3.432	15:11	1.872	19:11	.936	23:11	.624
3:12	.624	7:12	1.248	11:12	3.432	15:12	1.872	19:12	.936	23:12	.624
3:13	.624	7:13	1.248	11:13	4.680	15:13	1.560	19:13	1.248	23:13	.624
3:14	.624	7:14	1.248	11:14	4.680	15:14	1.560	19:14	1.248	23:14	.624
3:15	.624	7:15	1.248	11:15	4.680	15:15	1.560	19:15	1.248	23:15	.624
3:16	.624	7:16	1.248	11:16	4.680	15:16	1.560	19:16	1.248	23:16	.624
3:17	.624	7:17	1.248	11:17	4.680	15:17	1.560	19:17	1.248	23:17	.624
3:18	.624	7:18	1.248	11:18	4.680	15:18	1.560	19:18	1.248	23:18	.624
3:19	.624	7:19	1.248	11:19	4.680	15:19	1.560	19:19	1.248	23:19	.624
3:20	.624	7:20	1.248	11:20	4.680	15:20	1.560	19:20	1.248	23:20	.624
3:21	.624	7:21	1.248	11:21	4.680	15:21	1.560	19:21	1.248	23:21	.624
3:22	.624	7:22	1.248	11:22	4.680	15:22	1.560	19:22	1.248	23:22	.624
3:23	.624	7:23	1.248	11:23	4.680	15:23	1.560	19:23	1.248	23:23	.624
3:24	.624	7:24	1.248	11:24	4.680	15:24	1.560	19:24	1.248	23:24	.624
3:25	.624	7:25	1.248	11:25	6.864	15:25	1.560	19:25	.936	23:25	.624
3:26	.624	7:26	1.248	11:26	6.864	15:26	1.560	19:26	.936	23:26	.624
3:27	.624	7:27	1.248	11:27	6.864	15:27	1.560	19:27	.936	23:27	.624
3:28	.624	7:28	1.248	11:28	6.864	15:28	1.560	19:28	.936	23:28	.624
3:29	.624	7:29	1.248	11:29	6.864	15:29	1.560	19:29	.936	23:29	.624
3:30	.624	7:30	1.248	11:30	6.864	15:30	1.560	19:30	.936	23:30	.624
3:31	.624	7:31	1.248	11:31	6.864	15:31	1.560	19:31	.936	23:31	.624
3:32	.624	7:32	1.248	11:32	6.864	15:32	1.560	19:32	.936	23:32	.624
3:33	.624	7:33	1.248	11:33	6.864	15:33	1.560	19:33	.936	23:33	.624
3:34	.624	7:34	1.248	11:34	6.864	15:34	1.560	19:34	.936	23:34	.624
3:35	.624	7:35	1.248	11:35	6.864	15:35	1.560	19:35	.936	23:35	.624
3:36	.624	7:36	1.248	11:36	6.864	15:36	1.560	19:36	.936	23:36	.624
3:37	.624	7:37	1.248	11:37	16.536	15:37	1.560	19:37	1.248	23:37	.936
3:38	.624	7:38	1.248	11:38	16.536	15:38	1.560	19:38	1.248	23:38	.936
3:39	.624	7:39	1.248	11:39	16.536	15:39	1.560	19:39	1.248	23:39	.936
3:40	.624	7:40	1.248	11:40	16.536	15:40	1.560	19:40	1.248	23:40	.936
3:41	.624	7:41	1.248	11:41	16.536	15:41	1.560	19:41	1.248	23:41	.936
3:42	.624	7:42	1.248	11:42	16.536	15:42	1.560	19:42	1.248	23:42	.936
3:43	.624	7:43	1.248	11:43	16.536	15:43	1.560	19:43	1.248	23:43	.936
3:44	.624	7:44	1.248	11:44	16.536	15:44	1.560	19:44	1.248	23:44	.936
3:45	.624	7:45	1.248	11:45	16.536	15:45	1.560	19:45	1.248	23:45	.936
3:46	.624	7:46	1.248	11:46	16.536	15:46	1.560	19:46	1.248	23:46	.936

```
02465>       3:47    .624|   7:47   1.248|  11:47  16.536|  15:47   1.560|  19:47   1.248|  23:47    .936
02466>       3:48    .624|   7:48   1.248|  11:48  16.536|  15:48   1.560|  19:48   1.248|  23:48    .936
02467>       3:49    .624|   7:49   1.248|  11:49  34.320|  15:49   1.560|  19:49    .936|  23:49   1.248
02468>       3:50    .624|   7:50   1.248|  11:50  34.320|  15:50   1.560|  19:50    .936|  23:50   1.248
02469>       3:51    .624|   7:51   1.248|  11:51  34.320|  15:51   1.560|  19:51    .936|  23:51   1.248
02470>       3:52    .624|   7:52   1.248|  11:52  34.320|  15:52   1.560|  19:52    .936|  23:52   1.248
02471>       3:53    .624|   7:53   1.248|  11:53  34.320|  15:53   1.560|  19:53    .936|  23:53   1.248
02472>       3:54    .624|   7:54   1.248|  11:54  34.320|  15:54   1.560|  19:54    .936|  23:54   1.248
02473>       3:55    .624|   7:55   1.248|  11:55  34.320|  15:55   1.560|  19:55    .936|  23:55   1.248
02474>       3:56    .624|   7:56   1.248|  11:56  34.320|  15:56   1.560|  19:56    .936|  23:56   1.248
02475>       3:57    .624|   7:57   1.248|  11:57  34.320|  15:57   1.560|  19:57    .936|  23:57   1.248
02476>       3:58    .624|   7:58   1.248|  11:58  34.320|  15:58   1.560|  19:58    .936|  23:58   1.248
02477>       3:59    .624|   7:59   1.248|  11:59  34.320|  15:59   1.560|  19:59    .936|  23:59   1.248
02478>       4:00    .624|   8:00   1.248|  12:00  34.320|  16:00   1.560|  20:00    .936|  24:00   1.248
02479>
02480> ------------------------------------------------------------------------------------------------------------
02481> R0001:C00047-----------------------------------------------------------------------------------------------
02482> *#-----------------|-------------------------------------------------------------|
02483> *#-----------------|--------------------EXISTING-------------------------------|
02484> -------------------------
02485> | CALIB NASHYD          |   Area     (ha)=    2.390   Curve Number    (CN)= 60.30
02486> | 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
02487> -------------------------   U.H. Tp(hrs)=     .410
02488>
02489>      Unit Hyd Qpeak  (cms)=     .223
02490>
02491>      PEAK FLOW       (cms)=     .048 (i)
02492>      TIME TO PEAK    (hrs)=   12.533
02493>      DURATION        (hrs)=   26.783, (dddd|hh:mm:)=   1|02:47
02494>      AVERAGE FLOW    (cms)=     .003
02495>      RUNOFF VOLUME    (mm)=   13.917
02496>      TOTAL RAINFALL   (mm)=   62.400
02497>      RUNOFF COEFFICIENT   =     .223
02498>
02499>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02500>
02501> ------------------------------------------------------------------------------------------------------------
02502> R0001:C00048-----------------------------------------------------------------------------------------------
02503> *#-----------------|--------------------PROPOSED-----------------------------|
02504> -------------------------
02505> | CALIB STANDHYD        |   Area     (ha)=    3.89
02506> | 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
02507> -------------------------
02508>                             IMPERVIOUS    PERVIOUS (i)
02509>      Surface Area     (ha)=       1.88         2.01
02510>      Dep. Storage     (mm)=       2.00         5.00
02511>      Average Slope     (%)=       2.00         2.00
02512>      Length            (m)=     100.00        35.00
02513>      Mannings n             =      .013         .250
02514>
02515>      Max.eff.Inten.(mm/hr)=      70.20        24.09
02516>                   over (min)       2.00        14.00
02517>      Storage Coeff.  (min)=       2.39 (ii)   13.90 (ii)
02518>      Unit Hyd. Tpeak (min)=       2.00        14.00
02519>      Unit Hyd. peak  (cms)=        .50          .08
02520>                                                          *TOTALS*
02521>      PEAK FLOW       (cms)=        .20          .09          .262 (iii)
02522>      TIME TO PEAK    (hrs)=      12.20        12.35        12.200
02523>      RUNOFF VOLUME    (mm)=      60.40        14.22        26.364
02524>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02525>      RUNOFF COEFFICIENT   =        .97          .23          .422
02526>
02527>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02528>            CN* =  49.0    Ia = Dep. Storage  (Above)
02529>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02530>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02531>
02532> ------------------------------------------------------------------------------------------------------------
02533> R0001:C00049-----------------------------------------------------------------------------------------------
02534> *#-----------------|-------------------------------------------------------------|
02535> *#-----------------|---------------------POND----------------------------------|
02536> ----------------------
02537> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
02538> |  IN>01:201          |
02539> |  OUT<02:POND        | ========================  OUTLFOW STORAGE TABLE  ==========================
02540> ----------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
02541>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
02542>                           .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
02543>                           .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
02544>                           .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
02545>
02546>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
02547>      ---------------            (ha)     (cms)     (hrs)       (mm)
02548>      INFLOW > 01:201           3.890      .262    12.200     26.364
02549>     OUTFLOW < 02:POND          3.890      .017    14.233     26.364
02550>    OVERFLOW < 03:POND OUT       .000      .000      .000       .000
02551>
02552>                     TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
02553>                     CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
02554>                     PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
02555>
02556>
02557>                     PEAK   FLOW   REDUCTION [Qout/Qin](%)=    6.383
02558>                     TIME SHIFT OF PEAK FLOW         (min)=   122.00
02559>                     MAXIMUM  STORAGE   USED       (ha.m.)=.5716E-01
02560>
02561> ------------------------------------------------------------------------------------------------------------
02562> R0001:C00050-----------------------------------------------------------------------------------------------
02563> *#-----------------|-------------------------------------------------------------|
02564> *#-----------------|-------------------------------------------------------------|
02565> -------------------------
02566> | CALIB STANDHYD        |   Area     (ha)=     .35
02567> | 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
02568> -------------------------
02569>                             IMPERVIOUS    PERVIOUS (i)
02570>      Surface Area     (ha)=        .15          .20
02571>      Dep. Storage     (mm)=       2.00         5.00
02572>      Average Slope     (%)=       2.00         2.00
02573>      Length            (m)=     100.00        35.00
02574>      Mannings n             =      .013         .250
02575>
02576>      Max.eff.Inten.(mm/hr)=      70.20        35.18
02577>                   over (min)       2.00        12.00
02578>      Storage Coeff.  (min)=       2.39 (ii)   12.28 (ii)
02579>      Unit Hyd. Tpeak (min)=       2.00        12.00
02580>      Unit Hyd. peak  (cms)=        .50          .09
02581>                                                          *TOTALS*
02582>      PEAK FLOW       (cms)=        .00          .01          .013 (iii)
02583>      TIME TO PEAK    (hrs)=      12.20        12.32        12.300
02584>      RUNOFF VOLUME    (mm)=      60.40        16.19        17.426
02585>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02586>      RUNOFF COEFFICIENT   =        .97          .26          .279
02587>
02588>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02589>            CN* =  49.0    Ia = Dep. Storage  (Above)
02590>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02591>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02592>
02593> ------------------------------------------------------------------------------------------------------------
02594> R0001:C00051-----------------------------------------------------------------------------------------------
02595> *#-----------------|-------------------------------------------------------------|
02596> -------------------------
02597> | CALIB STANDHYD        |   Area     (ha)=     .17
02598> | 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
02599> -------------------------
02600>                             IMPERVIOUS    PERVIOUS (i)
02601>      Surface Area     (ha)=        .07          .10
02602>      Dep. Storage     (mm)=       2.00         5.00
02603>      Average Slope     (%)=       2.00         2.00
02604>      Length            (m)=     100.00        35.00
02605>      Mannings n             =      .013         .250
02606>
02607>      Max.eff.Inten.(mm/hr)=      70.20        35.09
02608>                   over (min)       2.00        12.00
02609>      Storage Coeff.  (min)=       2.39 (ii)   12.29 (ii)
02610>      Unit Hyd. Tpeak (min)=       2.00        12.00
02611>      Unit Hyd. peak  (cms)=        .79          .09
02612>                                                          *TOTALS*
02613>      PEAK FLOW       (cms)=        .00          .01          .006 (iii)
02614>      TIME TO PEAK    (hrs)=      12.05        12.32        12.317
02615>      RUNOFF VOLUME    (mm)=      60.40        16.17        16.214
02616>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02617>      RUNOFF COEFFICIENT   =        .97          .26          .260
02618>
02619>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02620>            CN* =  49.0    Ia = Dep. Storage  (Above)
02621>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02622>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02623>
02624> ------------------------------------------------------------------------------------------------------------
02625> R0001:C00052-----------------------------------------------------------------------------------------------
02626> -------------------------
02627> | ADD HYD               |
02628> | 06:CULVERT            |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
02629> -------------------------   ------------------ (ha)     (cms)    (hrs)      (mm)    (cms)
02630>                          ID 1 02:POND          3.890      .017   14.233     26.364    .000
02631>                         +ID 2 03:POND OUT       .000      .000     .000       .000    .000  **DRY**
02632>                         +ID 3 04:202            .350      .013   12.300     17.426    .000
02633>                         +ID 4 05:203            .170      .006   12.317     16.214    .000
02634>                          ========================================================================
02635>                          SUM   06:CULVERT       4.410      .034   12.317     25.263    .000
02636>
02637>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
02638>
02639> ------------------------------------------------------------------------------------------------------------
02640> R0001:C00053-----------------------------------------------------------------------------------------------
02641> *#-----------------|-------------------------------------------------------------|
02642> *#-----------------|-------------------------------------------------------------|
02643> *#-----------------|--------------------PROPOSED-----------------------------|
02644> -------------------------
02645> | CALIB STANDHYD        |   Area     (ha)=     .12
02646> | 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
02647> -------------------------
02648>                             IMPERVIOUS    PERVIOUS (i)
02649>      Surface Area     (ha)=        .05          .07
02650>      Dep. Storage     (mm)=       2.00         5.00
02651>      Average Slope     (%)=       2.00         2.00
02652>      Length            (m)=     100.00        35.00
02653>      Mannings n             =      .013         .250
02654>
02655>      Max.eff.Inten.(mm/hr)=      70.20        35.18
02656>                   over (min)       2.00        12.00
02657>      Storage Coeff.  (min)=       2.39 (ii)   12.28 (ii)
02658>      Unit Hyd. Tpeak (min)=       2.00        12.00
02659>      Unit Hyd. peak  (cms)=        .51          .09
02660>                                                          *TOTALS*
02661>      PEAK FLOW       (cms)=        .00          .00          .005 (iii)
02662>      TIME TO PEAK    (hrs)=      12.17        12.32        12.300
02663>      RUNOFF VOLUME    (mm)=      60.40        16.19        17.868
02664>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02665>      RUNOFF COEFFICIENT   =        .97          .26          .286
02666>
02667>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02668>            CN* =  49.0    Ia = Dep. Storage  (Above)
02669>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02670>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02671>
02672> ------------------------------------------------------------------------------------------------------------
02673> R0001:C00054-----------------------------------------------------------------------------------------------
02674> *#-----------------|--------------------PROPOSED-----------------------------|
02675> -------------------------
02676> | CALIB STANDHYD        |   Area     (ha)=     .12
02677> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
02678> -------------------------
02679>                             IMPERVIOUS    PERVIOUS (i)
02680>      Surface Area     (ha)=        .06          .06
02681>      Dep. Storage     (mm)=       2.00         5.00
02682>      Average Slope     (%)=       2.00         2.00
02683>      Length            (m)=     100.00        35.00
02684>      Mannings n             =      .013         .250
02685>
02686>      Max.eff.Inten.(mm/hr)=      70.20        10.08
02687>                   over (min)       2.00        19.00
02688>      Storage Coeff.  (min)=       2.39 (ii)   18.70 (ii)
02689>      Unit Hyd. Tpeak (min)=       2.00        19.00
02690>      Unit Hyd. peak  (cms)=        .50          .07
02691>                                                          *TOTALS*
02692>      PEAK FLOW       (cms)=        .01          .00          .012 (iii)
02693>      TIME TO PEAK    (hrs)=      12.20        12.43        12.200
02694>      RUNOFF VOLUME    (mm)=      60.40        10.24        34.467
02695>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02696>      RUNOFF COEFFICIENT   =        .97          .16          .552
02697>
02698>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02699>            CN* =  49.0    Ia = Dep. Storage  (Above)
02700>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02701>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02702>
02703> ------------------------------------------------------------------------------------------------------------
02704> R0001:C00055-----------------------------------------------------------------------------------------------
02705> *#-----------------|--------------------EXISTING-----------------------------|
02706> -------------------------
02707> | CALIB NASHYD          |   Area     (ha)=    2.960   Curve Number    (CN)= 60.30
02708> | 07:102        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
02709> -------------------------   U.H. Tp(hrs)=     .440
02710>
02711>      Unit Hyd Qpeak  (cms)=     .257
02712>
02713>      PEAK FLOW       (cms)=     .057 (i)
02714>      TIME TO PEAK    (hrs)=   12.567
02715>      DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
02716>      AVERAGE FLOW    (cms)=     .004
02717>      RUNOFF VOLUME    (mm)=   13.917
02718>      TOTAL RAINFALL   (mm)=   62.400
02719>      RUNOFF COEFFICIENT   =     .223
02720>
02721>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02722>
02723> ------------------------------------------------------------------------------------------------------------
02724> R0001:C00056-----------------------------------------------------------------------------------------------
02725> *#-----------------|--------------------PROPOSED-----------------------------|
02726> -------------------------
02727> | CALIB STANDHYD        |   Area     (ha)=     .55
02728> | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
02729> -------------------------
02730>                             IMPERVIOUS    PERVIOUS (i)
02731>      Surface Area     (ha)=        .21          .34
02732>      Dep. Storage     (mm)=       2.00         5.00
02733>      Average Slope     (%)=       2.00         2.00
02734>      Length            (m)=     100.00        35.00
02735>      Mannings n             =      .013         .250
02736>
02737>      Max.eff.Inten.(mm/hr)=      70.20        30.86
02738>                   over (min)       2.00        13.00
02739>      Storage Coeff.  (min)=       2.39 (ii)   12.82 (ii)
02740>      Unit Hyd. Tpeak (min)=       2.00        13.00
02741>      Unit Hyd. peak  (cms)=        .59          .09
02742>                                                          *TOTALS*
02743>      PEAK FLOW       (cms)=        .00          .02          .019 (iii)
02744>      TIME TO PEAK    (hrs)=      12.08        12.33        12.333
02745>      RUNOFF VOLUME    (mm)=      60.40        15.60        15.641
02746>      TOTAL RAINFALL   (mm)=      62.40        62.40        62.400
02747>      RUNOFF COEFFICIENT   =        .97          .25          .251
02748>
02749>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
02750>            CN* =  49.0    Ia = Dep. Storage  (Above)
02751>         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
02752>        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
02753>
02754> ------------------------------------------------------------------------------------------------------------
02755> R0001:C00057-----------------------------------------------------------------------------------------------
02756> *#**************************************************************************
02757> *#                        2 YEAR, 4 HOUR CHICAGO STORM
02758> *#**************************************************************************
02759> *#-----------------|-------------------------------------------------------|
02760> --------------------
02761> | MASS STORM      |    Filename: C:\Users\efinbow\OneDrive - CF Crozier & Associates\Desktop\SCS C
02762> | Ptotal= 45.60 mm |    Comments: 24 hour SCS II storm mass curve
02763> --------------------
02764>                          Duration of storm        =   24.00 hrs
02765>                          Mass curve time step     =   12.00 min
02766>                          Selected storm time step =    1.00 min
02767>                          Volume of derived storm  =   45.60 mm
02768>
02769>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
02770>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
02771>        0:01    .000|   4:01    .456|   8:01    .912|  12:01  51.300|  16:01   1.140|  20:01    .912
02772>        0:02    .000|   4:02    .456|   8:02    .912|  12:02  51.300|  16:02   1.140|  20:02    .912
```

```
02773>      0:03   .000|  4:03   .456|  8:03   .912|  12:03  51.300|  16:03  1.140|  20:03   .912|
02774>      0:04   .000|  4:04   .456|  8:04   .912|  12:04  51.300|  16:04  1.140|  20:04   .912|
02775>      0:05   .000|  4:05   .456|  8:05   .912|  12:05  51.300|  16:05  1.140|  20:05   .912|
02776>      0:06   .000|  4:06   .456|  8:06   .912|  12:06  51.300|  16:06  1.140|  20:06   .912|
02777>      0:07   .000|  4:07   .456|  8:07   .912|  12:07  51.300|  16:07  1.140|  20:07   .912|
02778>      0:08   .000|  4:08   .456|  8:08   .912|  12:08  51.300|  16:08  1.140|  20:08   .912|
02779>      0:09   .000|  4:09   .456|  8:09   .912|  12:09  51.300|  16:09  1.140|  20:09   .912|
02780>      0:10   .000|  4:10   .456|  8:10   .912|  12:10  51.300|  16:10  1.140|  20:10   .912|
02781>      0:11   .000|  4:11   .456|  8:11   .912|  12:11  51.300|  16:11  1.140|  20:11   .912|
02782>      0:12   .000|  4:12   .456|  8:12   .912|  12:12  51.300|  16:12  1.140|  20:12   .912|
02783>      0:13   .456|  4:13   .912|  8:13  1.368|  12:13   9.120|  16:13  1.140|  20:13   .684|
02784>      0:14   .456|  4:14   .912|  8:14  1.368|  12:14   9.120|  16:14  1.140|  20:14   .684|
02785>      0:15   .456|  4:15   .912|  8:15  1.368|  12:15   9.120|  16:15  1.140|  20:15   .684|
02786>      0:16   .456|  4:16   .912|  8:16  1.368|  12:16   9.120|  16:16  1.140|  20:16   .684|
02787>      0:17   .456|  4:17   .912|  8:17  1.368|  12:17   9.120|  16:17  1.140|  20:17   .684|
02788>      0:18   .456|  4:18   .912|  8:18  1.368|  12:18   9.120|  16:18  1.140|  20:18   .684|
02789>      0:19   .456|  4:19   .912|  8:19  1.368|  12:19   9.120|  16:19  1.140|  20:19   .684|
02790>      0:20   .456|  4:20   .912|  8:20  1.368|  12:20   9.120|  16:20  1.140|  20:20   .684|
02791>      0:21   .456|  4:21   .912|  8:21  1.368|  12:21   9.120|  16:21  1.140|  20:21   .684|
02792>      0:22   .456|  4:22   .912|  8:22  1.368|  12:22   9.120|  16:22  1.140|  20:22   .684|
02793>      0:23   .456|  4:23   .912|  8:23  1.368|  12:23   9.120|  16:23  1.140|  20:23   .684|
02794>      0:24   .456|  4:24   .912|  8:24  1.368|  12:24   9.120|  16:24  1.140|  20:24   .684|
02795>      0:25   .456|  4:25   .912|  8:25  1.368|  12:25   5.700|  16:25  1.140|  20:25   .684|
02796>      0:26   .456|  4:26   .912|  8:26  1.368|  12:26   5.700|  16:26  1.140|  20:26   .684|
02797>      0:27   .456|  4:27   .912|  8:27  1.368|  12:27   5.700|  16:27  1.140|  20:27   .684|
02798>      0:28   .456|  4:28   .912|  8:28  1.368|  12:28   5.700|  16:28  1.140|  20:28   .684|
02799>      0:29   .456|  4:29   .912|  8:29  1.368|  12:29   5.700|  16:29  1.140|  20:29   .684|
02800>      0:30   .456|  4:30   .912|  8:30  1.368|  12:30   5.700|  16:30  1.140|  20:30   .684|
02801>      0:31   .456|  4:31   .912|  8:31  1.368|  12:31   5.700|  16:31  1.140|  20:31   .684|
02802>      0:32   .456|  4:32   .912|  8:32  1.368|  12:32   5.700|  16:32  1.140|  20:32   .684|
02803>      0:33   .456|  4:33   .912|  8:33  1.368|  12:33   5.700|  16:33  1.140|  20:33   .684|
02804>      0:34   .456|  4:34   .912|  8:34  1.368|  12:34   5.700|  16:34  1.140|  20:34   .684|
02805>      0:35   .456|  4:35   .912|  8:35  1.368|  12:35   5.700|  16:35  1.140|  20:35   .684|
02806>      0:36   .456|  4:36   .912|  8:36  1.368|  12:36   5.700|  16:36  1.140|  20:36   .684|
02807>      0:37   .456|  4:37   .912|  8:37  1.368|  12:37   4.104|  16:37  1.140|  20:37   .456|
02808>      0:38   .456|  4:38   .912|  8:38  1.368|  12:38   4.104|  16:38  1.140|  20:38   .456|
02809>      0:39   .456|  4:39   .912|  8:39  1.368|  12:39   4.104|  16:39  1.140|  20:39   .456|
02810>      0:40   .456|  4:40   .912|  8:40  1.368|  12:40   4.104|  16:40  1.140|  20:40   .456|
02811>      0:41   .456|  4:41   .912|  8:41  1.368|  12:41   4.104|  16:41  1.140|  20:41   .456|
02812>      0:42   .456|  4:42   .912|  8:42  1.368|  12:42   4.104|  16:42  1.140|  20:42   .456|
02813>      0:43   .456|  4:43   .912|  8:43  1.368|  12:43   4.104|  16:43  1.140|  20:43   .456|
02814>      0:44   .456|  4:44   .912|  8:44  1.368|  12:44   4.104|  16:44  1.140|  20:44   .456|
02815>      0:45   .456|  4:45   .912|  8:45  1.368|  12:45   4.104|  16:45  1.140|  20:45   .456|
02816>      0:46   .456|  4:46   .912|  8:46  1.368|  12:46   4.104|  16:46  1.140|  20:46   .456|
02817>      0:47   .456|  4:47   .912|  8:47  1.368|  12:47   4.104|  16:47  1.140|  20:47   .456|
02818>      0:48   .456|  4:48   .912|  8:48  1.368|  12:48   4.104|  16:48  1.140|  20:48   .456|
02819>      0:49   .456|  4:49   .912|  8:49  1.368|  12:49   3.876|  16:49  1.140|  20:49   .684|
02820>      0:50   .456|  4:50   .912|  8:50  1.368|  12:50   3.876|  16:50  1.140|  20:50   .684|
02821>      0:51   .456|  4:51   .912|  8:51  1.368|  12:51   3.876|  16:51  1.140|  20:51   .684|
02822>      0:52   .456|  4:52   .912|  8:52  1.368|  12:52   3.876|  16:52  1.140|  20:52   .684|
02823>      0:53   .456|  4:53   .912|  8:53  1.368|  12:53   3.876|  16:53  1.140|  20:53   .684|
02824>      0:54   .456|  4:54   .912|  8:54  1.368|  12:54   3.876|  16:54  1.140|  20:54   .684|
02825>      0:55   .456|  4:55   .912|  8:55  1.368|  12:55   3.876|  16:55  1.140|  20:55   .684|
02826>      0:56   .456|  4:56   .912|  8:56  1.368|  12:56   3.876|  16:56  1.140|  20:56   .684|
02827>      0:57   .456|  4:57   .912|  8:57  1.368|  12:57   3.876|  16:57  1.140|  20:57   .684|
02828>      0:58   .456|  4:58   .912|  8:58  1.368|  12:58   3.876|  16:58  1.140|  20:58   .684|
02829>      0:59   .456|  4:59   .912|  8:59  1.368|  12:59   3.876|  16:59  1.140|  20:59   .684|
02830>      1:00   .456|  5:00   .912|  9:00  1.368|  13:00   3.876|  17:00  1.140|  21:00   .684|
02831>      1:01   .456|  5:01   .912|  9:01  1.368|  13:01   2.736|  17:01   .684|  21:01   .684|
02832>      1:02   .456|  5:02   .912|  9:02  1.368|  13:02   2.736|  17:02   .684|  21:02   .684|
02833>      1:03   .456|  5:03   .912|  9:03  1.368|  13:03   2.736|  17:03   .684|  21:03   .684|
02834>      1:04   .456|  5:04   .912|  9:04  1.368|  13:04   2.736|  17:04   .684|  21:04   .684|
02835>      1:05   .456|  5:05   .912|  9:05  1.368|  13:05   2.736|  17:05   .684|  21:05   .684|
02836>      1:06   .456|  5:06   .912|  9:06  1.368|  13:06   2.736|  17:06   .684|  21:06   .684|
02837>      1:07   .456|  5:07   .912|  9:07  1.368|  13:07   2.736|  17:07   .684|  21:07   .684|
02838>      1:08   .456|  5:08   .912|  9:08  1.368|  13:08   2.736|  17:08   .684|  21:08   .684|
02839>      1:09   .456|  5:09   .912|  9:09  1.368|  13:09   2.736|  17:09   .684|  21:09   .684|
02840>      1:10   .456|  5:10   .912|  9:10  1.368|  13:10   2.736|  17:10   .684|  21:10   .684|
02841>      1:11   .456|  5:11   .912|  9:11  1.368|  13:11   2.736|  17:11   .684|  21:11   .684|
02842>      1:12   .456|  5:12   .912|  9:12  1.368|  13:12   2.736|  17:12   .684|  21:12   .684|
02843>      1:13   .456|  5:13   .912|  9:13  1.368|  13:13   2.280|  17:13   .684|  21:13   .456|
02844>      1:14   .456|  5:14   .912|  9:14  1.368|  13:14   2.280|  17:14   .684|  21:14   .456|
02845>      1:15   .456|  5:15   .912|  9:15  1.368|  13:15   2.280|  17:15   .684|  21:15   .456|
02846>      1:16   .456|  5:16   .912|  9:16  1.368|  13:16   2.280|  17:16   .684|  21:16   .456|
02847>      1:17   .456|  5:17   .912|  9:17  1.368|  13:17   2.280|  17:17   .684|  21:17   .456|
02848>      1:18   .456|  5:18   .912|  9:18  1.368|  13:18   2.280|  17:18   .684|  21:18   .456|
02849>      1:19   .456|  5:19   .912|  9:19  1.368|  13:19   2.280|  17:19   .684|  21:19   .456|
02850>      1:20   .456|  5:20   .912|  9:20  1.368|  13:20   2.280|  17:20   .684|  21:20   .456|
02851>      1:21   .456|  5:21   .912|  9:21  1.368|  13:21   2.280|  17:21   .684|  21:21   .456|
02852>      1:22   .456|  5:22   .912|  9:22  1.368|  13:22   2.280|  17:22   .684|  21:22   .456|
02853>      1:23   .456|  5:23   .912|  9:23  1.368|  13:23   2.280|  17:23   .684|  21:23   .456|
02854>      1:24   .456|  5:24   .912|  9:24  1.368|  13:24   2.280|  17:24   .684|  21:24   .456|
02855>      1:25   .456|  5:25   .912|  9:25  1.368|  13:25   2.280|  17:25   .912|  21:25   .684|
02856>      1:26   .456|  5:26   .912|  9:26  1.368|  13:26   2.280|  17:26   .912|  21:26   .684|
02857>      1:27   .456|  5:27   .912|  9:27  1.368|  13:27   2.280|  17:27   .912|  21:27   .684|
02858>      1:28   .456|  5:28   .912|  9:28  1.368|  13:28   2.280|  17:28   .912|  21:28   .684|
02859>      1:29   .456|  5:29   .912|  9:29  1.368|  13:29   2.280|  17:29   .912|  21:29   .684|
02860>      1:30   .456|  5:30   .912|  9:30  1.368|  13:30   2.280|  17:30   .912|  21:30   .684|
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02902>      2:12   .456|  6:12   .912| 10:12  1.368|  14:12   2.280|  18:12   .684|  22:12   .456|
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03008>      3:58   .456|  7:58   .912| 11:58 25.080|  15:58   1.140|  19:58   .684|  23:58   .912|
03009>      3:59   .456|  7:59   .912| 11:59 25.080|  15:59   1.140|  19:59   .684|  23:59   .912|
03010>      4:00   .456|  8:00   .912| 12:00 25.080|  16:00   1.140|  20:00   .684|  24:00   .912|
03011>
03012> ------------------------------------------------------------------------------------------------------------------------
03013> R0001:C00058-------------------------------------------------------------------------------------------------------
03014> *#-----------------|-----------------------------------------------------------------------|
03015> *#-----------------|----------------------EXISTING-----------------------------------------|
03016> -------------------------
03017> | CALIB NASHYD           |   Area     (ha)=    2.390   Curve Number   (CN)= 60.30
03018> | 01:101        DT= 1.00 |   Ia       (mm)=    6.700   # of Linear Res.(N)=  3.00
03019> -------------------------   U.H. Tp(hrs)=     .410
03020>
03021>      Unit Hyd Qpeak  (cms)=     .223
03022>
03023>      PEAK FLOW       (cms)=     .025 (i)
03024>      TIME TO PEAK    (hrs)=   12.550
03025>      DURATION        (hrs)=   26.783, (dddd|hh:mm:)=   1|02:47
03026>      AVERAGE FLOW    (cms)=     .002
03027>      RUNOFF VOLUME     (mm)=    7.341
03028>      TOTAL RAINFALL    (mm)=   45.600
03029>      RUNOFF COEFFICIENT  =      .161
03030>
03031>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03032>
03033> ------------------------------------------------------------------------------------------------------------------------
03034> R0001:C00059-------------------------------------------------------------------------------------------------------
03035> *#-----------------|-----------------------PROPOSED----------------------------------------|
03036> -------------------------
03037> | CALIB STANDHYD         |   Area     (ha)=    3.89
03038> | 01:201        DT= 1.00 |   Total Imp(%)=   48.40   Dir. Conn.(%)=   26.30
03039> -------------------------
03040>                              IMPERVIOUS    PERVIOUS (i)
03041>      Surface Area      (ha)=       1.88         2.01
03042>      Dep. Storage      (mm)=       2.00         5.00
03043>      Average Slope      (%)=       2.00         2.00
03044>      Length             (m)=     100.00        35.00
03045>      Mannings n              =       .013         .250
03046>
03047>      Max.eff.Inten.(mm/hr)=      51.30        11.33
03048>                 over (min)          3.00        18.00
03049>      Storage Coeff.  (min)=       2.71 (ii)   18.28 (ii)
03050>      Unit Hyd. Tpeak (min)=       3.00        18.00
03051>      Unit Hyd. peak  (cms)=        .40          .06
03052>                                                          *TOTALS*
03053>      PEAK FLOW       (cms)=        .14          .04          .169 (iii)
03054>      TIME TO PEAK    (hrs)=      12.20        12.42        12.200
03055>      RUNOFF VOLUME    (mm)=      43.60         7.80        17.216
03056>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03057>      RUNOFF COEFFICIENT  =         .96          .17          .378
03058>
03059>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03060>            CN* =  49.0    Ia = Dep. Storage    (Above)
03061>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03062>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03063>
03064> ------------------------------------------------------------------------------------------------------------------------
03065> R0001:C00060-------------------------------------------------------------------------------------------------------
03066> *#-----------------|-----------------------------------------------------------------------|
03067> *#-----------------|-------------------------POND--------------------------------------|
03068> -------------------------
03069> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
03070> |  IN>01:201          |
03071> | OUT<02:POND         | ========================  OUTLFOW STORAGE TABLE  ========================
03072> ----------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
03073>                          (cms)    (ha.m.)|  (cms)    (ha.m.)|  (cms)    (ha.m.)|  (cms)    (ha.m.)
03074>                          .000 .0000E+00|    .017 .5900E-01|    .022 .1280E+00|    .667 .2070E+00
03075>                          .009 .1500E-01|    .019 .9200E-01|    .098 .1660E+00|   1.958 .2510E+00
03076>                          .013 .3300E-01|    .022 .1280E+00|    .667 .2070E+00|    .000 .0000E+00
03077>
03078>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
03079>      ---------------------      (ha)     (cms)     (hrs)       (mm)
03080>      INFLOW > 01:201           3.890      .169    12.200     17.216
```

```
03081>     OUTFLOW < 02:POND           3.890      .013    13.600     17.216
03082>    OVERFLOW < 03:POND OUT        .000      .000      .000       .000
03083>
03084>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
03085>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
03086>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
03087>
03088>
03089>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    7.928
03090>                    TIME SHIFT OF PEAK FLOW         (min)=    84.00
03091>                    MAXIMUM  STORAGE   USED       (ha.m.)=.3569E-01
03092>
03093> ------------------------------------------------------------------------------------------------
03094> R0001:C00061------------------------------------------------------------------------------------
03095> *#-----------------|-------------------------------------------------------------|
03096> *#-----------------|-------------------------------------------------------------|
03097>  ------------------------
03098> | CALIB STANDHYD         |   Area    (ha)=     .35
03099> | 04:202        DT= 1.00 |   Total Imp(%)=   41.70   Dir. Conn.(%)=    2.80
03100>  ------------------------
03101>                             IMPERVIOUS    PERVIOUS (i)
03102>      Surface Area     (ha)=        .15          .20
03103>      Dep. Storage     (mm)=       2.00         5.00
03104>      Average Slope     (%)=       2.00         2.00
03105>      Length            (m)=     100.00        35.00
03106>      Mannings n            =       .013         .250
03107>
03108>      Max.eff.Inten.(mm/hr)=      51.30        16.45
03109>                  over (min)=       3.00        16.00
03110>      Storage Coeff.  (min)=       2.71 (ii)   16.12 (ii)
03111>      Unit Hyd. Tpeak (min)=       3.00        16.00
03112>      Unit Hyd. peak  (cms)=        .41          .07
03113>                                                          *TOTALS*
03114>      PEAK FLOW       (cms)=        .00          .01          .006 (iii)
03115>      TIME TO PEAK    (hrs)=      12.20        12.38        12.367
03116>      RUNOFF VOLUME    (mm)=      43.60         9.02         9.990
03117>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03118>      RUNOFF COEFFICIENT   =        .96          .20          .219
03119>
03120>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03121>            CN* =  49.0    Ia = Dep. Storage  (Above)
03122>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03123>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03124>
03125> ------------------------------------------------------------------------------------------------
03126> R0001:C00062------------------------------------------------------------------------------------
03127> *#-----------------|-------------------------------------------------------------|
03128>  ------------------------
03129> | CALIB STANDHYD         |   Area    (ha)=     .17
03130> | 05:203        DT= 1.00 |   Total Imp(%)=   40.00   Dir. Conn.(%)=     .10
03131>  ------------------------
03132>                             IMPERVIOUS    PERVIOUS (i)
03133>      Surface Area     (ha)=        .07          .10
03134>      Dep. Storage     (mm)=       2.00         5.00
03135>      Average Slope     (%)=       2.00         2.00
03136>      Length            (m)=     100.00        35.00
03137>      Mannings n            =       .013         .250
03138>
03139>      Max.eff.Inten.(mm/hr)=      51.30        16.41
03140>                  over (min)=       3.00        16.00
03141>      Storage Coeff.  (min)=       2.71 (ii)   16.13 (ii)
03142>      Unit Hyd. Tpeak (min)=       3.00        16.00
03143>      Unit Hyd. peak  (cms)=        .63          .07
03144>                                                          *TOTALS*
03145>      PEAK FLOW       (cms)=        .00          .00          .003 (iii)
03146>      TIME TO PEAK    (hrs)=      12.07        12.38        12.383
03147>      RUNOFF VOLUME    (mm)=      43.60         9.01         9.045
03148>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03149>      RUNOFF COEFFICIENT   =        .96          .20          .198
03150>
03151>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03152>            CN* =  49.0    Ia = Dep. Storage  (Above)
03153>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03154>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03155>
03156> ------------------------------------------------------------------------------------------------
03157> R0001:C00063------------------------------------------------------------------------------------
03158>  ------------------------
03159> | ADD HYD                |
03160> | 06:CULVERT             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
03161>  ------------------------                        (ha)     (cms)    (hrs)      (mm)    (cms)
03162>                           ID 1 02:POND           3.890     .013   13.600    17.216    .000
03163>                          +ID 2 03:POND OUT       .000     .000     .000      .000    .000  **DRY**
03164>                          +ID 3 04:202            .350     .006   12.367     9.990    .000
03165>                          +ID 4 05:203            .170     .003   12.383     9.045    .000
03166>                           ==========================================================
03167>                           SUM   06:CULVERT      4.410     .021   12.400    16.328    .000
03168>
03169>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
03170>
03171> ------------------------------------------------------------------------------------------------
03172> R0001:C00064------------------------------------------------------------------------------------
03173> *#-----------------|-------------------------------------------------------------|
03174> *#-----------------|-------------------------------------------------------------|
03175> *#-----------------|--------------------PROPOSED---------------------------------|
03176>  ------------------------
03177> | CALIB STANDHYD         |   Area    (ha)=     .12
03178> | 09:204        DT= 1.00 |   Total Imp(%)=   42.30   Dir. Conn.(%)=    3.80
03179>  ------------------------
03180>                             IMPERVIOUS    PERVIOUS (i)
03181>      Surface Area     (ha)=        .05          .07
03182>      Dep. Storage     (mm)=       2.00         5.00
03183>      Average Slope     (%)=       2.00         2.00
03184>      Length            (m)=     100.00        35.00
03185>      Mannings n            =       .013         .250
03186>
03187>      Max.eff.Inten.(mm/hr)=      51.30        16.45
03188>                  over (min)=       3.00        16.00
03189>      Storage Coeff.  (min)=       2.71 (ii)   16.12 (ii)
03190>      Unit Hyd. Tpeak (min)=       3.00        16.00
03191>      Unit Hyd. peak  (cms)=        .41          .07
03192>                                                          *TOTALS*
03193>      PEAK FLOW       (cms)=        .00          .00          .002 (iii)
03194>      TIME TO PEAK    (hrs)=      12.18        12.38        12.367
03195>      RUNOFF VOLUME    (mm)=      43.60         9.02        10.336
03196>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03197>      RUNOFF COEFFICIENT   =        .96          .20          .227
03198>
03199>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03200>            CN* =  49.0    Ia = Dep. Storage  (Above)
03201>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03202>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03203>
03204> ------------------------------------------------------------------------------------------------
03205> R0001:C00065------------------------------------------------------------------------------------
03206> *#-----------------|--------------------PROPOSED---------------------------------|
03207>  ------------------------
03208> | CALIB STANDHYD         |   Area    (ha)=     .12
03209> | 10:205        DT= 1.00 |   Total Imp(%)=   48.30   Dir. Conn.(%)=   48.30
03210>  ------------------------
03211>                             IMPERVIOUS    PERVIOUS (i)
03212>      Surface Area     (ha)=        .06          .06
03213>      Dep. Storage     (mm)=       2.00         5.00
03214>      Average Slope     (%)=       2.00         2.00
03215>      Length            (m)=     100.00        35.00
03216>      Mannings n            =       .013         .250
03217>
03218>      Max.eff.Inten.(mm/hr)=      51.30         4.44
03219>                  over (min)=       3.00        25.00
03220>      Storage Coeff.  (min)=       2.71 (ii)   25.36 (ii)
03221>      Unit Hyd. Tpeak (min)=       3.00        25.00
03222>      Unit Hyd. peak  (cms)=        .40          .07
03223>                                                          *TOTALS*
03224>      PEAK FLOW       (cms)=        .01          .00          .009 (iii)
03225>      TIME TO PEAK    (hrs)=      12.20        12.52        12.200
03226>      RUNOFF VOLUME    (mm)=      43.60         5.41        23.853
03227>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03228>      RUNOFF COEFFICIENT   =        .96          .12          .523
03229>
03230>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03231>            CN* =  49.0    Ia = Dep. Storage  (Above)
03232>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03233>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03234>
03235> ------------------------------------------------------------------------------------------------
03236> R0001:C00066------------------------------------------------------------------------------------
03237> *#-----------------|--------------------EXISTING---------------------------------|
03238> *#-----------------|-------------------------------------------------------------|
03239> | CALIB NASHYD           |   Area    (ha)=    2.960   Curve Number   (CN)= 60.30
03240> | 07:102        DT= 1.00 |   Ia      (mm)=    6.700   # of Linear Res.(N)=  3.00
03241>  ------------------------   U.H. Tp(hrs)=     .440
03242>
03243>      Unit Hyd Qpeak  (cms)=     .257
03244>
03245>      PEAK FLOW       (cms)=     .029 (i)
03246>      TIME TO PEAK    (hrs)=   12.583
03247>      DURATION        (hrs)=   26.967, (dddd|hh:mm:)=   1|02:58
03248>      AVERAGE FLOW    (cms)=     .002
03249>      RUNOFF VOLUME    (mm)=    7.341
03250>      TOTAL RAINFALL   (mm)=   45.600
03251>      RUNOFF COEFFICIENT   =     .161
03252>
03253>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03254>
03255> ------------------------------------------------------------------------------------------------
03256> R0001:C00067------------------------------------------------------------------------------------
03257> *#-----------------|--------------------PROPOSED---------------------------------|
03258> *#-----------------|-------------------------------------------------------------|
03259> | CALIB STANDHYD         |   Area    (ha)=     .55
03260> | 08:206        DT= 1.00 |   Total Imp(%)=   37.30   Dir. Conn.(%)=     .10
03261>  ------------------------
03262>                             IMPERVIOUS    PERVIOUS (i)
03263>      Surface Area     (ha)=        .21          .34
03264>      Dep. Storage     (mm)=       2.00         5.00
03265>      Average Slope     (%)=       2.00         2.00
03266>      Length            (m)=     100.00        35.00
03267>      Mannings n            =       .013         .250
03268>
03269>      Max.eff.Inten.(mm/hr)=      51.30        14.54
03270>                  over (min)=       3.00        17.00
03271>      Storage Coeff.  (min)=       2.71 (ii)   16.80 (ii)
03272>      Unit Hyd. Tpeak (min)=       3.00        17.00
03273>      Unit Hyd. peak  (cms)=        .54          .07
03274>                                                          *TOTALS*
03275>      PEAK FLOW       (cms)=        .00          .01          .009 (iii)
03276>      TIME TO PEAK    (hrs)=      12.08        12.40        12.400
03277>      RUNOFF VOLUME    (mm)=      43.60         8.65         8.687
03278>      TOTAL RAINFALL   (mm)=      45.60        45.60        45.600
03279>      RUNOFF COEFFICIENT   =        .96          .19          .191
03280>
03281>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
03282>            CN* =  49.0    Ia = Dep. Storage  (Above)
03283>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
03284>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
03285>
03286> ------------------------------------------------------------------------------------------------
03287> R0001:C00068------------------------------------------------------------------------------------
03288> *#-----------------|-------------------------------------------------------------|
03289> *#*****************************************************************************
03290>  ------------------
03291> | FINISH         |
03292>  ------------------
03293> ------------------------------------------------------------------------------------------------
03294> ************************************************************************************************
03295>      WARNINGS / ERRORS / NOTES
03296>      -------------------------
03297>    Simulation ended on 2021-05-26     at 08:54:03
03298> ================================================================================================
03299>
03300>
```

CROZIER
CONSULTING ENGINEERS

Project:	425 Union Street
Project No.:	1923-5641
File:	Pond Hydraulic Design
Design by:	E. Finbow
Date:	May-21
Updated:	May-21

EXTENDED DETENTION SPECIFICATIONS - PRELIMINARY POND DESIGN

Extended Detention Volume (Area x runoff from 25mm event)		299
t (drawdown time - seconds, *hours in italics*)	*24.0*	86400
Ao (cross section area of orifice - sqm)		0.005
h (maximum water elevation above orifice for extended detention- m)		0.40
C (discharge coefficient)		0.63
Ap (average surface area for extended detention - sqm)		875.5

t = 2*Ap*(h^0.5)/(C*Ao*(g*2)^0.5)

Ao = 0.00459317 m d = 76 mm

Extended Detention Orifice Diameter (as designe d = **100** mm

CROZIER CONSULTING ENGINEERS

425 Union Street, Meaford - SWM POND DESIGN

Project:	425 Union Street
Project No.:	1923-5641
File:	Pond Hydraulic Design
Design by:	E. Finbow / R. Alexander
Date:	2021.05.25
Updated:	2021.05.25

Pond Stage - Storage - Discharge Calculations

E.D. Orifice Diameter:	0.100 m			
E.D. Orifice Invert Elevation:	215.41 m			
Rect weir length	m	Emergency Spill Elev.	216.51 m	
Rect weir invert	m	Emerg Spill Bot. Width	1 m	
Weir Elevation Above PP:	m	Trap. Side Slopes	5 :1	H:V
Extended Detention Depth:	215.66 m			

Elev. (m)	Depth Above PP (m)	Area (sqm)	Storage Volume (cu.m)	ED Orifice Discharge (cu.m/s)	Rect. Weir Discharge* (cu.m/s)	Emerg. Weir Ave. Width (m)	Emerg. Weir Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
215.41	0.00	711	0	0.0000	0.000	0.00	0.000	0.000	0.000
215.46	0.05	738	36	0.0000	0.000	0.00	0.000	0.000	0.004
215.51	0.10	764	74	0.0050	0.000	0.00	0.000	0.005	0.007
215.56	0.15	792	113	0.0070	0.000	0.00	0.000	0.007	0.011
215.61	0.20	820	153	0.0086	0.000	0.00	0.000	0.009	0.015
215.66	0.25	848	195	0.0100	0.000	0.00	0.000	0.010	0.019
215.71	0.30	875	238	0.0111	0.000	0.00	0.000	0.011	0.024
215.76	0.35	903	282	0.0122	0.000	0.00	0.000	0.012	0.028
215.81	0.40	1040	331	0.0132	0.000	0.00	0.000	0.013	0.033
215.86	0.45	1178	386	0.0141	0.000	0.00	0.000	0.014	0.039
215.91	0.50	1315	448	0.0149	0.000	0.00	0.000	0.015	0.045
215.96	0.55	1452	518	0.0157	0.000	0.00	0.000	0.016	0.052
216.01	0.60	1589	594	0.0165	0.000	0.00	0.000	0.017	0.059
216.06	0.65	1621	674	0.0172	0.000	0.00	0.000	0.017	0.067
216.11	0.70	1652	756	0.0180	0.000	0.00	0.000	0.018	0.076
216.16	0.75	1684	839	0.0186	0.000	0.00	0.000	0.019	0.084
216.21	0.80	1716	924	0.0193	0.000	0.00	0.000	0.019	0.092
216.26	0.85	1747	1011	0.0199	0.000	0.00	0.000	0.020	0.101
216.31	0.90	1779	1099	0.0205	0.000	0.00	0.000	0.021	0.110
216.36	0.95	1811	1189	0.0211	0.000	0.00	0.000	0.021	0.119
216.41	1.00	1844	1280	0.0217	0.000	0.00	0.000	0.022	0.128
216.46	1.05	1876	1373	0.0223	0.000	0.00	0.000	0.022	0.137
216.51	1.10	1909	1468	0.0228	0.000	1.00	0.000	0.023	0.147
216.56	1.15	1942	1564	0.0234	0.000	1.25	0.022	0.045	0.156
216.61	1.20	1975	1662	0.0239	0.000	1.50	0.074	0.098	0.166
216.66	1.25	2008	1761	0.0244	0.000	1.75	0.159	0.183	0.176
216.71	1.30	2041	1863	0.0249	0.000	2.00	0.279	0.304	0.186
216.76	1.35	2074	1966	0.0254	0.000	2.25	0.439	0.464	0.197
216.81	1.40	2108	2070	0.0259	0.000	2.50	0.641	0.667	0.207
216.86	1.45	2142	2176	0.0263	0.000	2.75	0.888	0.915	0.218
216.91	1.50	2176	2284	0.0268	0.000	3.00	1.184	1.211	0.228
216.96	1.55	2209	2394	0.0273	0.000	3.25	1.530	1.558	0.239
217.01	1.60	2243	2505	0.0277	0.000	3.50	1.930	1.958	0.251
217.06	1.65	2276	2618	0.0282	0.000	3.75	2.386	2.414	0.262

Drainage Block

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.00500	m/m
Left Side Slope	3.00	m/m (H:V)
Right Side Slope	3.00	m/m (H:V)
Discharge	0.22	m³/s

Results

Normal Depth	0.33	m
Flow Area	0.32	m²
Wetted Perimeter	2.06	m
Hydraulic Radius	0.15	m
Top Width	1.95	m
Critical Depth	0.25	m
Critical Slope	0.01885	m/m
Velocity	0.68	m/s
Velocity Head	0.02	m
Specific Energy	0.35	m
Froude Number	0.54	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	m
Length	0.00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	m
Profile Description		
Profile Headloss	0.00	m
Downstream Velocity	Infinity	m/s
Upstream Velocity	Infinity	m/s
Normal Depth	0.33	m
Critical Depth	0.25	m
Channel Slope	0.00500	m/m
Critical Slope	0.01885	m/m

Drainage Block

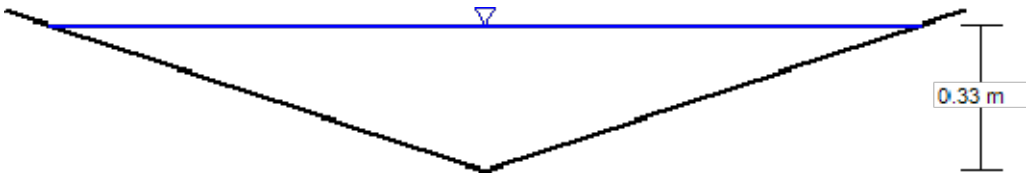
Project Description

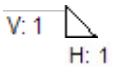
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.00500	m/m
Normal Depth	0.33	m
Left Side Slope	3.00	m/m (H:V)
Right Side Slope	3.00	m/m (H:V)
Discharge	0.22	m³/s

Cross Section Image





FIGURES

Legend

= SUBJECT LANDS

Project

425 UNION STREET
MUNICIPALITY OF MEAFORD

Drawing

SITE LOCATION

CROZIER CONSULTING ENGINEERS
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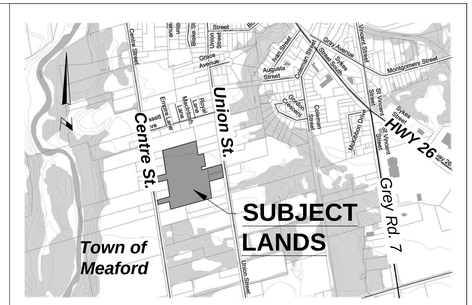
Drawn By	Design By	Project
N.L.	N.L.	1923-5641

Scale	Date	Check By	Drawing
N.T.S.	APR/20/2021	G.C.	FIG. 1



KEY MAP n.t.s

DRAFT PLAN OF SUBDIVISION OF
PART OF LOTS
421, 422, 423, 424 AND 425
REGISTERED PLAN 309
(FORMERLY TOWN OF MEAFORD)
MUNICIPALITY OF MEAFORD
COUNTY OF GREY

SURVEYOR CERTIFICATE:

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATION TO THE ADJACENT LANDS ARE ACCURATELY SHOWN ON THIS PLAN.

DATED THE ____DAY OF _____2021.

_____
NAME:
ONTARIO LAND SURVEYOR

OWNER CERTIFICATE:

AS OF THE DATE ON THIS PLAN THE UNDERSIGNED BEING THE REGISTERED OWNERS OF THE SUBJECT LANDS HEREBY AUTHORIZE _____ TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION AND TO MAKE APPLICATION TO THE GREY COUNTY PLANNING DEPARTMENT FOR APPROVAL THEREOF.

DATED THE ____DAY OF _____2021.

_____
NAME:
I HAVE THE AUTHORITY TO BIND THE CORPORATION

PLANNING ACT, SECTION 51(17)

(a) As shown on draft plan
(b) As shown on draft plan
(c) As shown on draft plan
(d) See schedule of land use
(e) As shown on draft plan
(f) As shown on draft plan
(g) As shown on draft plan
(h) Piped municipal treated water
(i) Clayey sandy silt
(j) As shown on draft plan
(k) Municipal sanitary sewer
(l) None

Revision#. Date D/M/Y	Description / Notes
1. 27/04/2021	DRAFT PLAN FOR SUBMISSION
2. 20/05/2021	REVISED DRAFT PLAN FOR SUBMISSION

SCALE / METRIC
0 5 10 20 30 50 m
1 : 750

SCHEDULE OF LAND USE

LOTS – USE – AREA(m^2)

LOT 1–LOT 3 – SEMI–DETACHED LOTS – 1626.29
LOT 4–LOT 9 – SINGLE DETACHED LOTS – 4411.67
LOT 10–LOT 21 – SINGLE DETACHED LOTS – 7967.05
LOT 22–LOT 23 – SEMI–DETACHED LOTS – 1212.44
LOT 24–LOT 25 – SEMI–DETACHED LOTS – 1359.4
LOT 26–LOT 41 – SINGLE DETACHED LOTS – 9492.61
LOT 42–LOT 43 – SEMI–DETACHED LOTS – 1177.15
LOT 45–LOT 51 – SINGLE DETACHED LOTS – 2678.84
LOT 52–LOT 55, LOT 44 – SEMI–DETACHED LOTS – 2582.31
LOT 56–LOT 59, LOT 67 – SEMI–DETACHED LOTS – 2795.95
LOT 60– LOT 66 – SINGLE DETACHED LOTS – 2840.03
LOTS 1–67 TOTAL AREA(m^2) – 38143.74

OPEN SPACE BLOCKS

BLOCK 68 – STORM WATER MANAGEMENT (SWM) – 2649.02
BLOCK 69 – OPEN SPACE–WALKWAY SERVICE CONNECTION – 663.24
BLOCK 70 – FUTURE DEVELOPMENT – 379.58
OPEN SPACE TOTAL AREA(m^2) – 3691.84

ROAD SYSTEM

STREET A – 6562.2
BLOCK 71 – CONDOMINIUM ROAD – 854.88
BLOCK 72 – CONDOMINIUM ROAD – 1123.34
BLOCK 73 – CONDOMINIUM ROAD – 1689.94
ROAD SYSTEM TOTAL AREA(m^2) – 10230.36

SINGLE DETACHED LOTS: 4–21, 26–41 ,45–51, 60–66 / 48 LOTS (48 DWELLING UNITS)
SEMI DETACHED LOTS: 1–3, 22–25, 42–44, 52–59, 67 / 19 LOTS (38 DWELLING UNITS)
TOTAL LOTS – 67 (86 DWELLING UNITS)

TOTAL SITE AREA(m^2) – 52065.93
TOTAL NET DEVELOPMENT AREA(m^2) – 39186
(TOTAL SITE AREA LESS ROAD SYSTEM AND SWM BLOCK)
DENSITY – 21.9 DWELLING UNITS/HA
(TOTAL NUMBER OF DWELLING UNITS PER TOTAL NET DEVELOPMENT AREA)

ZUBEK, EMO
PATTEN & THOMSEN LIMITED
ONTARIO LAND SURVEYORS
200 MOUNTAIN ROAD
UNIT 4
COLLINGWOOD, ONTARIO L9Y 4V5
PHONE: (705) 445–4910

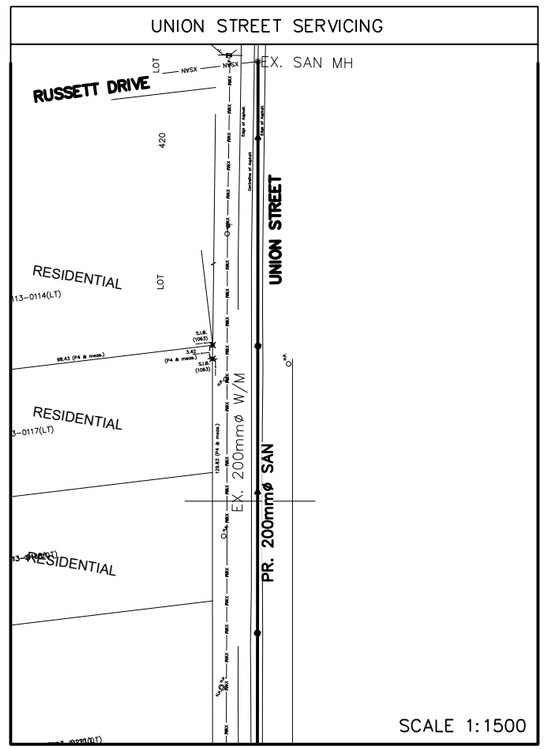
travis & associates
planning consultants
approvals facilitators
development managers
7 – 275 first street collingwood
ontario canada L9Y 1A8
v 705 446 9917 f 446 9918
travisinc.ca

File/CAD: TA–MEAFORD–DRAFT.dwg
Date: 20–05–2021 | Drafted by: D.C. | Checked by: C.T.

D-1

Date Plotted: May 27, 2021

J:\1900\1923-Royal Lepage\5641-425 Union St_External\Site Plan\2021.05.20\MEAFORD-DRAFT-May20 - Standard\MEAFORD-DRAFT-May20.dwg, 2021-05-27 1:28:03 PM, DWG To PDF.pc3



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED LOT LINES
- PROPERTY LIMITS
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- PROPOSED HYDRANT AND VALVE

EX. WM TO BE REMOVED AND PLUGGED AT THE WATERMAIN ON UNION STREET AND CENTRE STREET

Project

425 UNION STREET
MUNICIPALITY OF MEAFORD

Drawing

SERVICING PLAN

CROZIER CONSULTING ENGINEERS
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N.L.	N.L./G.C.	1923-5641
Scale 1:1250	**Date** APR/20/2021	**Check By** G.C.	**Drawing** FIG. 3

OUTLET #2

OUTLET #1

LEGEND

- ×198.11 — EXISTING ELEVATION
- PROPERTY BOUNDARY
- DRAINAGE AREA
- OVERLAND FLOW ARROW
- CATCHMENT ID
- RUN OFF COEFFICIENT
- CATCHMENT AREA (ha)

CENTRE STREET

UNION STREET

REGISTERED PLAN 81 (FORMERLY TOWNSHIP OF ST. VINCENT)

Project	UNION STREET MUNICIPALITY OF MEAFORD
Drawing	PRE-DEVELOPMENT DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
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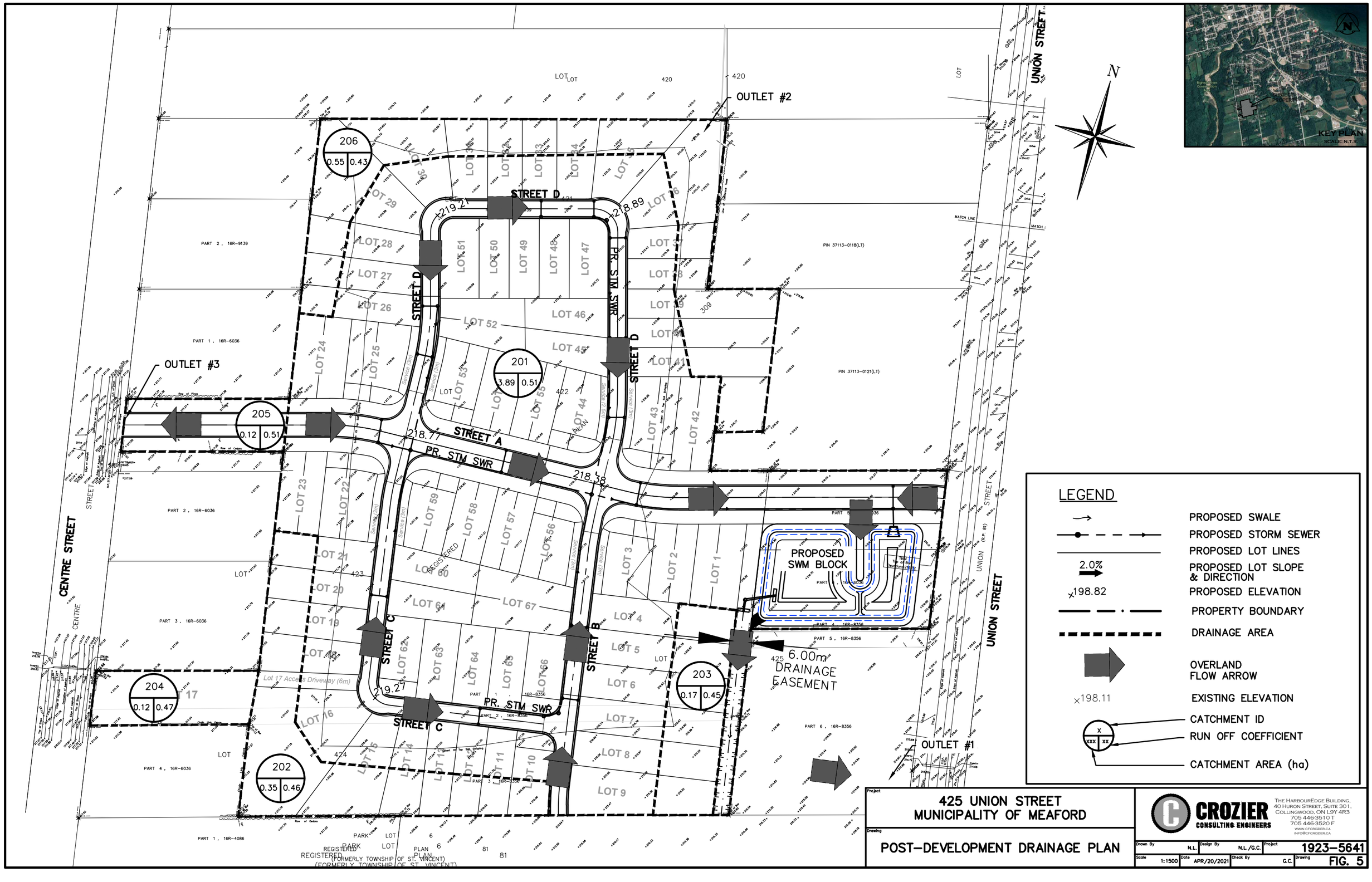
N.L.	N.L./G.C.	1923-5641
Scale 1:1500	Date APR/20/2021	Check By G.C.	Drawing FIG. 4



Project

425 UNION STREET
MUNICIPALITY OF MEAFORD

Drawing

POST-DEVELOPMENT DRAINAGE PLAN

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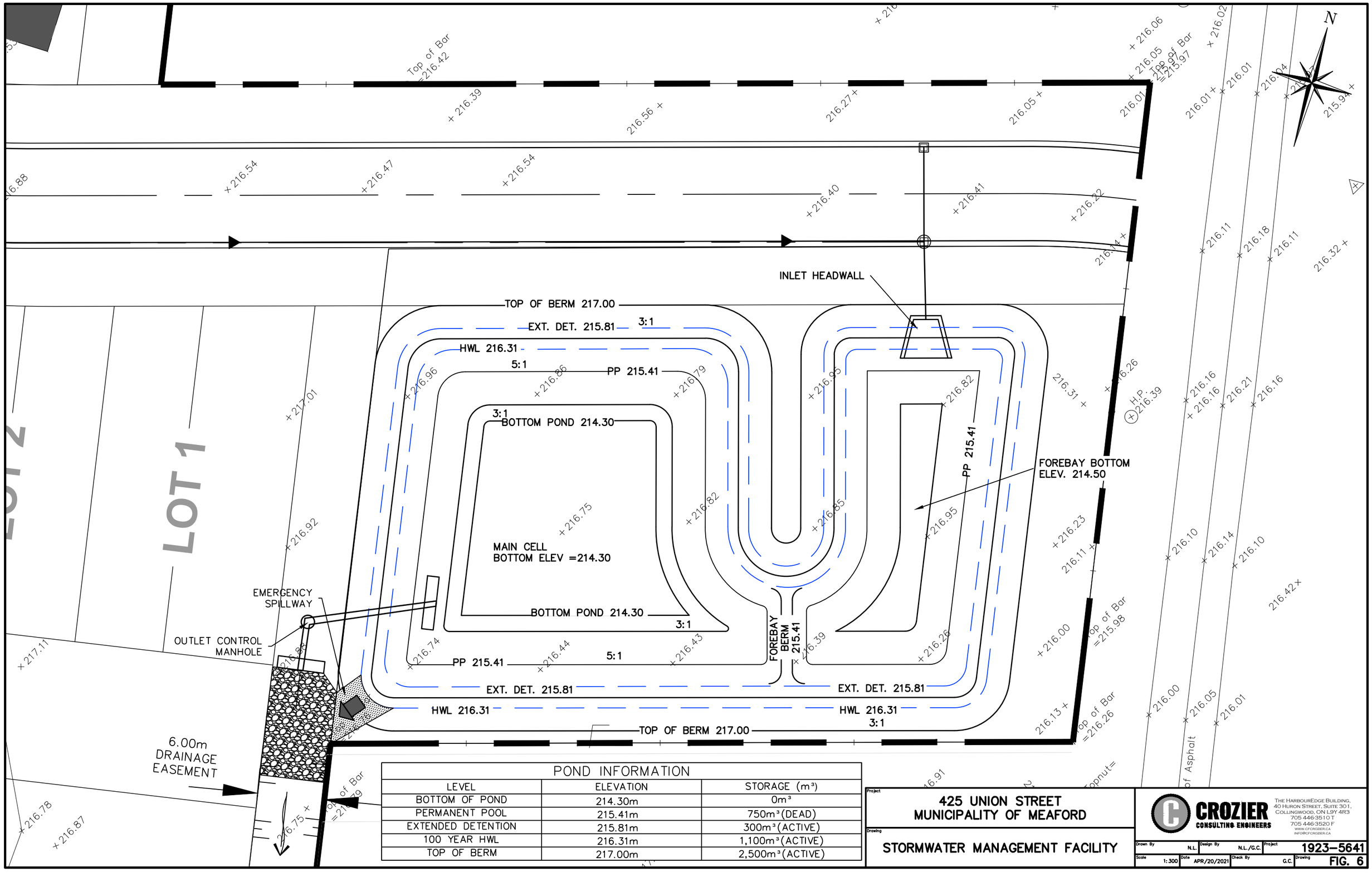
Drawn By	Design By	Project
N.L.	N.L./G.C.	1923-5641
Scale 1:1500	Date APR/20/2021	Check By G.C.

Drawing FIG. 5



POND INFORMATION		
LEVEL	ELEVATION	STORAGE (m^3)
BOTTOM OF POND	214.30m	$0m^3$
PERMANENT POOL	215.41m	$750m^3$ (DEAD)
EXTENDED DETENTION	215.81m	$300m^3$ (ACTIVE)
100 YEAR HWL	216.31m	$1,100m^3$ (ACTIVE)
TOP OF BERM	217.00m	$2,500m^3$ (ACTIVE)

Project
425 UNION STREET
MUNICIPALITY OF MEAFORD

Drawing
STORMWATER MANAGEMENT FACILITY

CROZIER
CONSULTING ENGINEERS
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Drawn By	Design By	Project
N.L.	N.L./G.C.	1923-5641
Scale	Date	Check By	Drawing
1: 300	APR/20/2021	G.C.	FIG. 6