



Enhancing our communities






Discovery Center Relocation & P2 Parking Area

STORMWATER MANAGEMENT REPORT

Blue Mountain Resorts LP

Document Control

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Issue	Date	Description
1	December 9, 2025	Site Plan Approval

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1 Introduction

Tatham Engineering Limited (Tatham) has been retained by Blue Mountain Resorts LP to prepare a Stormwater Management (SWM) plan in support of the proposed relocation of the Discovery Center Building and P2 Parking area alteration located at 218 Jozo Weider Boulevard in the Town of the Blue Mountains.

1.1 PURPOSE

This Stormwater Management (SWM) report outlines the engineering review for the proposed relocation of the Discovery Center building and modifications to the P2 parking area. The objective is to confirm that the development will not negatively impact local surface water quantity or quality. To achieve this, the report evaluates existing and proposed drainage conditions, identifies potential impacts, and recommends mitigation measures where necessary.

1.2 BACKGROUND AND GUIDELINES

With respect to the history of Blue Mountain Resort and the village core, there has been considerable development of the area over the past 35 years. The following SWM reports have been prepared to support the overall development of the resort and village core:

Village Core Stormwater Management, Henderson, Paddon & Associates, 1987

The original SWM Plan included utilizing the snowmaking pond (Mill Pond) and two golf course ponds (Ponds 2 & 3) in series to attenuate post-development peak flow rates and provide water quality treatment.

Changes to the Existing Village Core Stormwater Management, Henderson, Paddon & Associates, 1999

The report concluded that the snowmaking pond (Mill Pond) could be eliminated from the SWM system by routing drainage around the Mill Pond through a trunk storm sewer to Ponds 2 & 3. Modifications were made to the outlet structures to provide water quantity and quality controls.

Intrawest Village Core Area Stormwater Management Brief, December 1999, Tatham Engineering Limited

The report provided recommendations to modify the drainage system including taking the snowmaking pond (Mill Pond) offline, the construction of a trunk storm sewer along Gord Canning Drive, and modifications to the Ponds 2 & 3 outlet structures.

An Environmental Compliance Approval (ECA) was issued for the storm system including the outlet controls in 2000. This ECA was updated in 2008 and most recently in 2011. The Amended



ECA is included in Appendix A for reference. The current ECA has been reviewed in the context of this development and it has been determined that an amendment to the ECA is not required.

In addition to the previous SWM reports, the following Municipal and Provincial guidelines on municipal design, water resources, and the environment were referenced including:

- *Town of the Blue Mountains Engineering Standards. Town of the Blue Mountains (November 2024).*
- *Stormwater Management Practices Planning and Design Manual. Ministry of the Environment, Conservation and Parks (2003).*

1.3 PROPOSED DEVELOPMENT

The existing Discovery Center is located at the northeast end of the P2 parking area at the Blue Mountain Resort. The building is proposed to be relocated to the base of the Easy Rider ski run. The P2 parking area will be regraded to allow for approximately 55 additional parking spaces. A site location plan (Figure 1) illustrates the proposed Discovery Center relocation and P2 parking area.



2 Existing Conditions

Existing site topography, ground cover, and drainage patterns were established through interpretation of aerial photography and a topographic site survey. The existing overall drainage catchments, along with the existing BMR SWM facilities (Ponds 2 & 3) located on the existing BMR golf course lands, are illustrated on Drawing ODP.1 enclosed with this report.

The subject area lies within the drainage catchment designated as Catchment A7 on Drawing ODP.1, which forms the basis of this assessment.

2.1 HYDROLOGY

As noted above, the site is situated within Catchment A7 and is the focus of the hydrologic analysis. Under existing conditions, runoff generally sheet-flows northeast across the catchment toward the northeast corner of the P2 Parking area, identified as POI #1 (Point of Interest) on the pre-development drainage plan (Drawing DP.1 enclosed).

Catchment A7 has been subdivided into two catchments, A7A and A7B, as shown on Drawing DP.1. Under existing conditions, the imperviousness for these catchments have been calculated as 57% and 53%, respectively.

To quantify the existing peak flow rates, a Visual OTTHYMO hydrologic model was created to assess the peak flow rates discharging to the Village Crescent ROW. Design storms were derived from site specific IDF data obtained from the MTO IDF Curve Lookup Tool. The peak flow rates for the 25mm, 1:2-year through 1:100-year return frequency and Regional (Timmins) Storm events at POI #1 are summarized in Table 1. Detailed hydraulic modeling inputs and results are provided in Appendix C.



Table 1: Existing Condition Peak Flow Summary (POI #1)

STORM EVENT	PEAK FLOW (m ³ /s)	
	4HR CHICAGO	24HR SCS II
25 mm	0.69	-
2-year	0.87	1.15
5-year	1.25	1.64
10-year	1.52	1.96
25-year	2.16	2.56
50-year	2.49	2.90
100-year	2.80	3.23
Timmins	1.09	-



3 Proposed Conditions

Under proposed conditions, drainage will continue to follow the existing condition drainage patterns. Flows will be conveyed via a combination of sheet flow and ditches to the northeast corner of the P2 Parking area.

The post development catchment areas are identified as Catchments A7A, A7B and A7C on drawing DP.2. Under proposed conditions, the imperviousness of the catchments have been calculated to be 57%, 53% and 50% respectively. A grass swale SWMF is proposed in the northeast corner of the P2 Parking area to over control flows from catchment A7C to compensate for the increased imperviousness of catchment A7A.

3.1 HYDROLOGY

To quantify the proposed condition peak flow rates discharging at POI #1, the existing condition Visual OTTHYMO hydrologic model was revised to incorporate the proposed works and grassed swale LID. Design storms were derived from site specific IDF data obtained from the MTO IDF Curve Lookup Tool. The peak flow rates for the 25mm, 1:2-year through 1:100-year return frequency and Regional (Timmins) Storm events at POI #1 are summarized in Table 2. Detailed hydraulic modeling inputs and results are provided in Appendix C.

Table 2: Proposed Condition Peak Flow Summary (POI #1)

STORM EVENT	PEAK FLOW (m ³ /s)	
	4HR CHICAGO	24HR SCS II
25 mm	0.65 (0.69)	-
2-year	0.81 (0.87)	1.06 (1.15)
5-year	1.20 (1.25)	1.53 (1.64)
10-year	1.44 (1.52)	1.84 (1.96)
25-year	1.85 (2.16)	2.40 (2.56)
50-year	2.11 (2.49)	2.73 (2.90)
100-year	2.55 (2.80)	3.05 (3.23)
Timmins	1.06 (1.09)	-

Note: (0.23) - Pre-Development peak flow rate



The peak flow rates summarized in Table 2 indicate that the proposed grass swale SWMF controls peak flow rates at the outlet to levels below the existing conditions listed in Table 1.

3.2 WATER QUANTITY CONTROL

As demonstrated in Section 3.1, the proposed grassed swale LID will provide the requisite water quantity control for Catchment A7.

The outlet control for the proposed LID is an orifice plate which will discharge runoff generated by the 25 mm storm through the Regional (Timmins) design storms. In the case of an obstruction to the primary outlet, an emergency overflow weir has been included in the design. Flow will be discharged from the weir to Village Crescent where it will be collected by the existing storm sewer system. Overflows during the major storm events will follow the existing overland flow route. The grassed swale LID outlet is described as follows:

- 600 mm x 600 mm ditch inlet catch basin with a 3:1 grate slope and a 300 mm diameter outlet pipe complete with a 275 mm diameter orifice plate; and
- Emergency overflow – 3.0m wide trapezoidal broad crested weir with 5:1 (H:V) side slopes.

The operating characteristics of the pond SWMF are summarized in Table 3.

Table 3: Pond SWMF Design Operating Characteristics

STORM	DISCHARGE (m ³ /s)		STORAGE VOLUME (m ³)		WATER ELEVATION (m)	
	4HR CHICAGO	24HR SCS II	4HR CHICAGO	24HR SCS II	4HR CHICAGO	24HR SCS II
25 mm	0.018		2		224.35	
1:2-Year	0.022	0.046	2	4	224.35	224.40
1:5-Year	0.044	0.067	4	7	224.40	224.45
1:10-Year	0.056	0.082	5	10	224.43	224.51
1:25-Year	0.073	0.096	8	16	224.49	224.59
1:50-Year	0.086	0.105	10	21	224.51	224.65
1:100-Year	0.091	0.115	13	27	224.55	224.70
Regional (Hazel)	0.050		4		224.40	

As demonstrated by the hydrologic modelling, there will be no increase to peak flow rates discharging at POI #1 to the Village Crescent right-of-way.



The peak uncontrolled flow into the proposed grass swale ($0.144 \text{ m}^3/\text{s}$) is generated by the 1:100-year SCS design storm. If the outlet is 100% obstructed, the overflow weir will convey this flow at an elevation of approximately 224.76 m (0.04 m freeboard). A Detailed weir flow calculation is provided in Appendix D.

3.3 WATER QUALITY CONTROL

Water quality control for the proposed alterations will continue to be provided by Ponds 2 & 3 as described in the Tatham Stormwater Management Brief (December 1999, Appendix A). Under proposed conditions, the 101.69 ha catchment area has been calculated to be 18% impervious using ground cover interpreted from aerial photographs. The overall tributary catchment area is illustrated on Drawing ODP.1 enclosed with this report.

To provide the required level 1 enhanced quality treatment, a $97.5 \text{ m}^3/\text{ha}$ water quality storage volume is required for the wet pond facility as specified by Table 3.2 in the MECP SWM manual. The total water quality storage requirement is $9,915 \text{ m}^3$ with $5,847 \text{ m}^3$ being the required permanent pool volume.

The required extended detention volume was taken as the greater of $40 \text{ m}^3/\text{ha}$ ($3,876 \text{ m}^3$) or the volume produced by the 25 mm design storm rainfall depth taken over the total area of the site ($6,915 \text{ m}^3$). Therefore, the required extended detention volume is $6,915 \text{ m}^3$.

The simplified approach for determining the Ministry of the Environment Conservation and Parks (MECP) erosion control storage volume was also considered. The required erosion control storage volume is $8,135 \text{ m}^3$.

The ponds have sufficient volume to provide the water quality treatment for the tributary drainage area. Therefore, water quality treatment will continue to be provided by Ponds 2 & 3. The water quality storage required under proposed conditions and provided in Ponds 2 & 3 is summarized in Table 4. A detailed calculation sheet is included in Appendix D.

Table 4: Proposed Condition Water Quality Storage Summary

	PERMANENT POOL STORAGE VOLUME m^3	EXTENDED DETENTION STORAGE VOLUME m^3
BMR/Village Core Area (Required)	5,847	6,915
Provided in Pond 3	46,100	5,600
Provided in Pond 2	26,500	3,300
Combined Water Quality Storage (Provided)	72,600	8,900



4 Erosion and Sediment Controls

Siltation and erosion control will be implemented for all construction activities, including topsoil stripping, material stockpiling, building construction, site servicing and grading operations. The basic principles to be adhered to in order to minimize erosion and sedimentation and resultant negative environmental impacts include:

1. Minimize disturbance activities where possible;
2. Expose the smallest possible land area to erosion for the shortest possible time;
3. Institute erosion control measures as required immediately;
4. Implement sediment control measures before the outset of construction activities;
5. Carry out regular inspections of erosion/sediment control measures and repair or maintain as necessary; and
6. Carry out regular inspections and required maintenance of the SWMF.

The proposed grading, servicing and building construction should be carried out in such a manner that a minimum amount of erosion occurs and such that sedimentation facilities control any erosion that does occur. Erosion, sediment, and pollution control measures are detailed in the engineering drawing sets and include the following:

1. Erection of silt control fence below any grading operations to control erosion;
2. Install filter fabric in all adjacent storm structures to control sediment movement; and
3. Revegetate disturbed areas to enhance long-term siltation and erosion control.



5 Summary

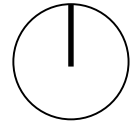
This report has been prepared to support the site plan approval of the relocation of the existing Discovery Center and alterations to the P2 parking area while considering the findings of the relevant background reports and guidelines. The report demonstrates that adequate quantity and quality SWM controls can be provided by the proposed grass swale SWMF and existing BMR SWM infrastructure (Ponds 2 & 3).

The hydrologic assessment completed confirms that there will be no increase in peak flow rates as a result of the proposed development. Quantity control for the proposed will be provided by the proposed grassed swale LID located at the northeast corner of the P2 parking area.

The existing SWM facilities (Ponds 2 & 3) have sufficient capacity to provide water quality treatment for the proposed development. The existing ponds will provide Level 1, enhanced water quality treatment as outlined in the MECP SWM Manual.

Erosion and sediment controls will be provided during construction to mitigate any adverse impacts off site. Controls will be inspected and maintained during construction and remain in place until the site is fully stabilized.

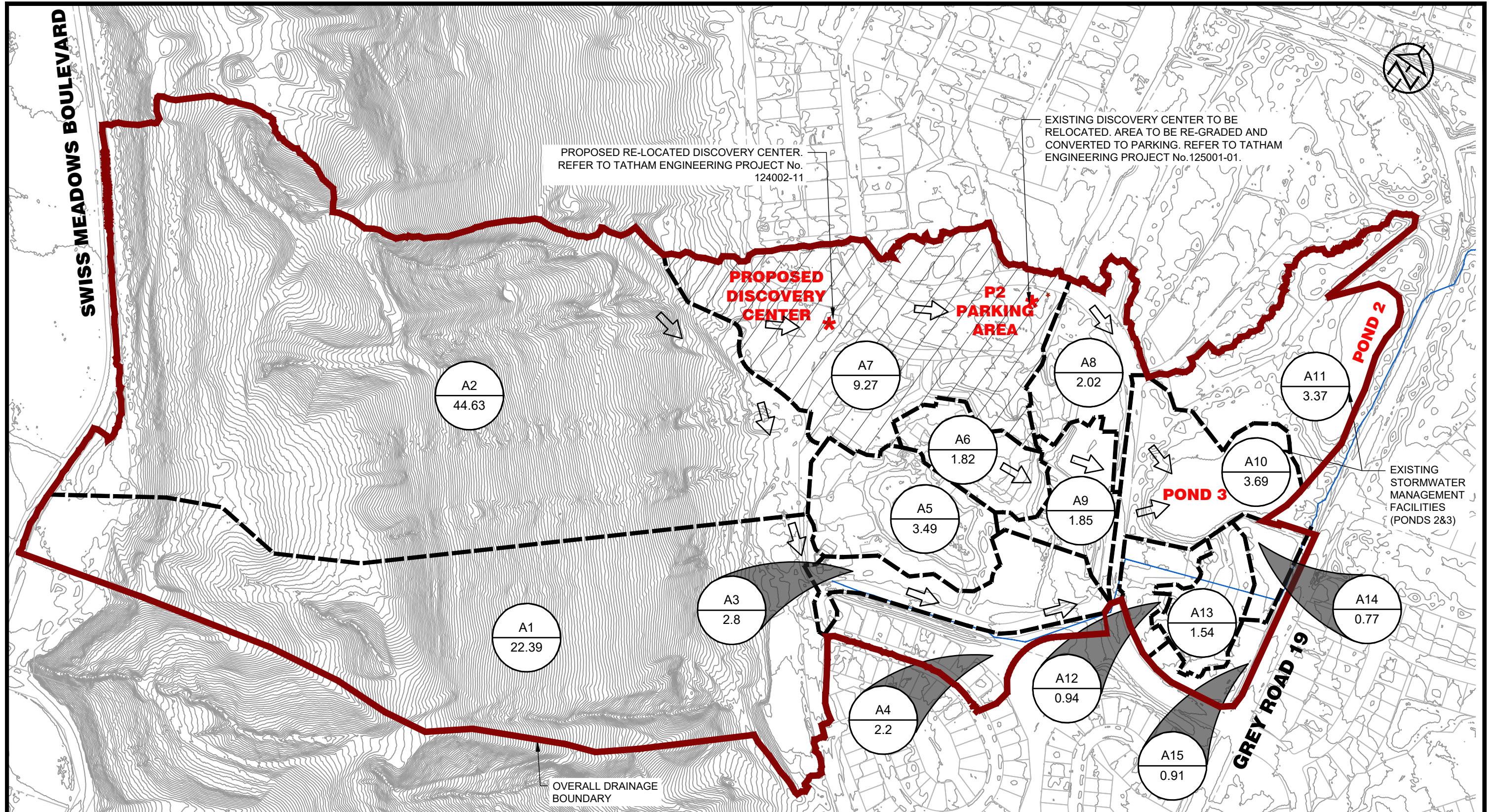




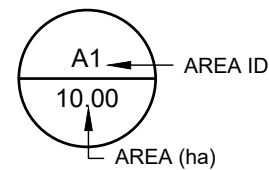
Discovery Center & P2 Parking, Blue Mountain Ski Resorts, The Town of Blue Mountains

Figure 1 - Site Location Plan





LEGEND



DISCOVERY CENTER RELOCATION
OVERALL DRAINAGE PLAN
 BLUE MOUNTAIN RESORTS LP

DWG. No.

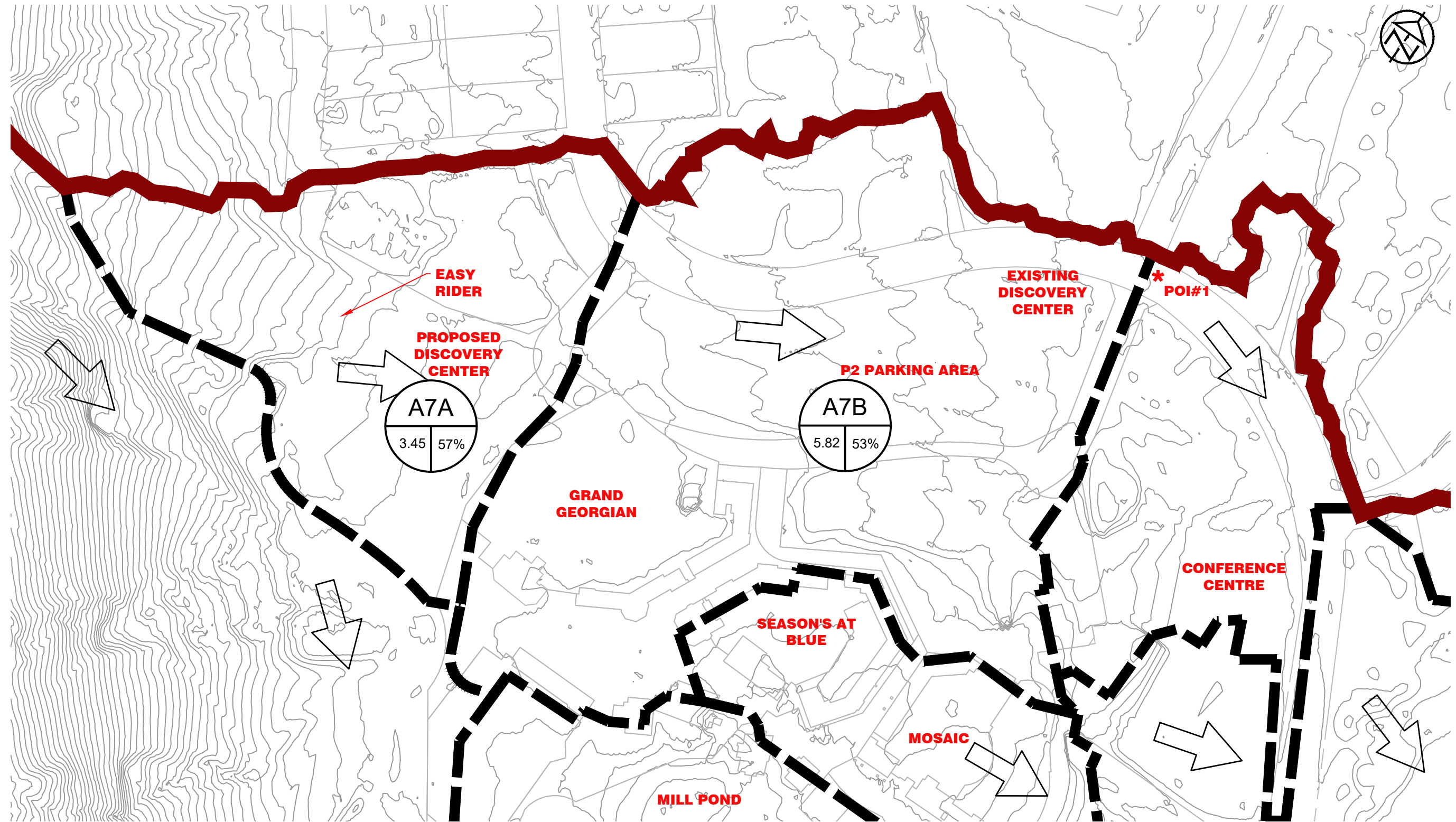
ODP.1

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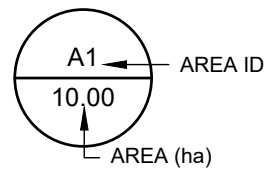
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DATE: NOV 2025

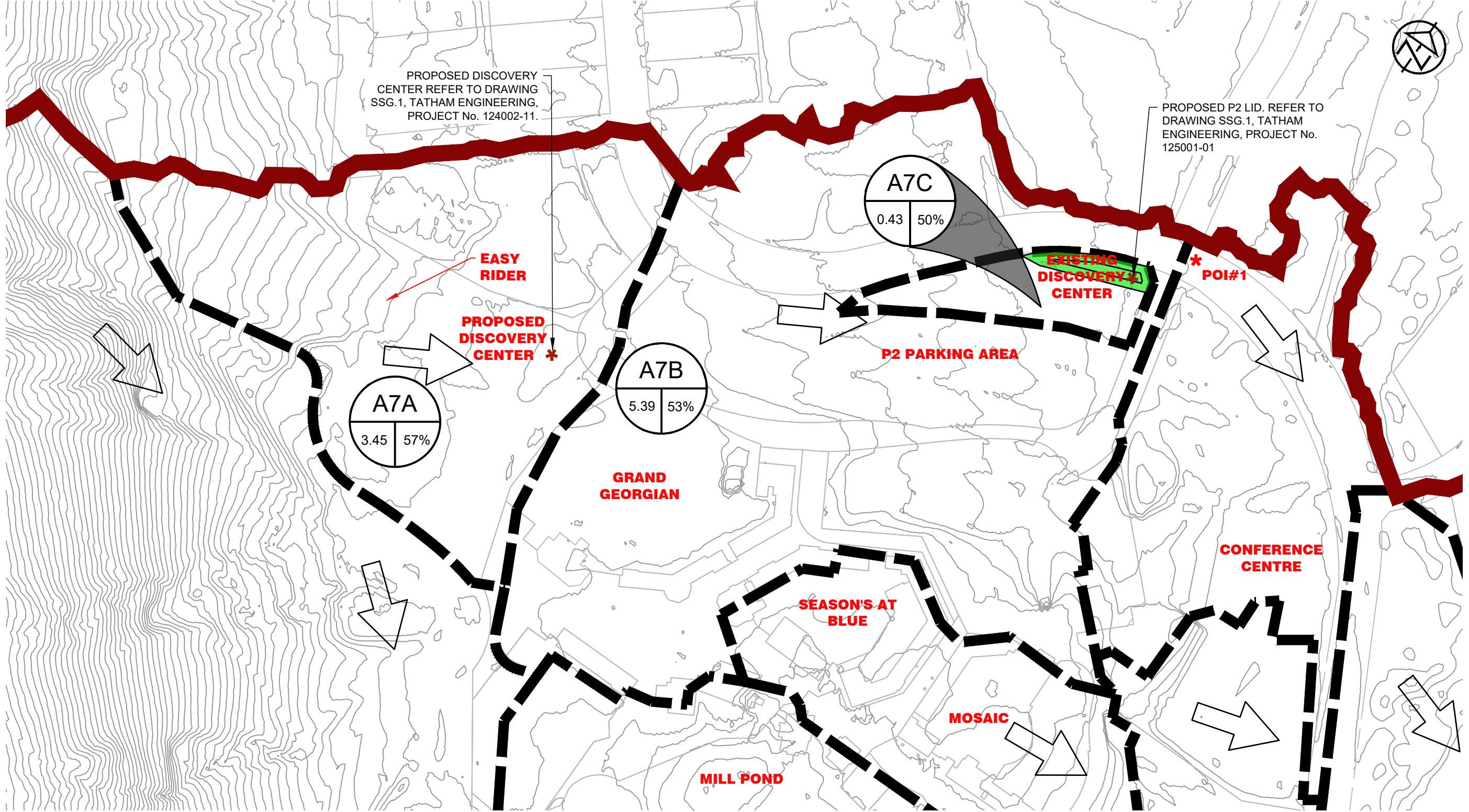
JOB NO. 125001-01



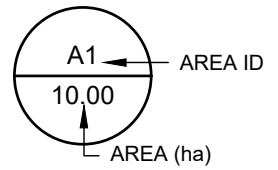
LEGEND



	DISCOVERY CENTER RELOCATION PRE-DEVELOPMENT DRAINAGE PLAN BLUE MOUNTAIN RESORTS LP		DWG. No. DP.1
	SCALE: 1:2000	DRAWN: KB	DATE: NOV 2025



LEGEND



	DISCOVERY CENTER RELOCATION POST-DEVELOPMENT DRAINAGE PLAN BLUE MOUNTAIN RESORTS LP		DWG. No. DP.2
	SCALE: 1:2000	DRAWN: KB	DATE: NOV 2025

Appendix A: MECP ECA



AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 8146-8SYJC5
Issue Date: April 3, 2012

Blue Mountain Resorts Limited and Blue Mountain Village Association
108 Jozo Weider Blvd
The Blue Mountains, Ontario
L9Y 3Z2

Site Location: Part Lots 17-18, Concession 2
Lot 17, 18, Concession 2
Town of The Blue Mountains, County of Grey

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

a drainage system within the subwatershed of the east tributary to Watercourse # 6 serving the Intrawest/Village Core Area comprising of residential and commercial development in the Town of The Blue Mountains as follows:

discharge from the Village Mill Pond via a bottom draw structure to Golf Course Pond # 3 and thence to Golf Course Pond # 2, with pond discharge directed to a channel, the east tributary of Watercourse # 6, flowing easterly (under and across Grey Road 19 and Grey Road 21) where it joins the west tributary of Watercourse # 6, before discharging into the Silver Creek Provincially Significant Wetland and eventually to Georgian Bay.

a continuous discharge from the Intrawest Village Mill Pond to the existing outfall of Golf Course Pond #2 into the east tributary of Watercourse #6 that will not exceed 2726 m³/d (500 USgpm) and will be managed in a manner that will minimize the contribution of permitted water taking from Nottawasaga Bay to downstream flow in the watercourse,

Storm Sewers

Storm sewers located at the base of Blue Mountain, Mountain Drive, Jozo Weider Boulevard and Monterra Course.

Golf Course (Stormwater Management) Ponds #2 and #3

Golf course ponds # 2 and #3 designed to convey and control storm runoff from the Intrawest Village Core Area for storms up to approximately the 5 year storm events and provide water storage volumes for the golf course irrigation facility from Ponds # 2 and #3 as follows:

	Permanent Pool Storage Volume (m ³)	Extended Detention Storage Volume (m ³)
Pond # 3	46,100	5,600
Pond # 2	26,500	3,300
Total	72,600	8,900

all in accordance with the submitted supporting documents listed in **Schedule 'A'**.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document and any schedules attached to it, and the application;

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"Director" means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the *EPA*;

"District Manager" means the District Manager of the Owen Sound District Office;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

"Ministry" means the ministry of the government of Ontario responsible for the *EPA* and *OWRA* and includes all officials, employees or other persons acting on its behalf;

"Owner" means Blue Mountain Resorts Limited and Blue Mountain Village Association and its successors and assignees;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"Regional Director" means the Regional Director of the Southwestern Region of the Ministry;

"Works" means the sewage works described in the *Owner's* application, and this *Approval*;

"E. Coli" refers to the thermally tolerant forms of *Escherichia* that can survive at 44.5 degrees Celsius.

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

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

- (1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval*, and the application for approval of the *Works*.
- (3) Where there is a conflict between a provision of any document in the schedule referred to in this *Approval* and the conditions of this *Approval*, the Conditions in this *Approval* shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.
- (4) Where there is a conflict between the documents listed in the Schedule submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The Conditions of this *Approval* are severable. If any Condition of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Approval* shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed within five (5) years of the date of this *Approval*.

3. CHANGE OF OWNER

- (1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within thirty (30) days of the change occurring:
 - (a) change of *Owner*;

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(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. PERFORMANCE

4.1 The *Owner* shall endeavour to operate the golf course ponds such that the fecal coliform concentration of 100 organism per 100 mL is not exceeded in the pond effluent ahead of the golf course spray irrigation system.

5. MONITORING AND RECORDING

5.1 The *Owner* shall ensure that the following monitoring program is carried out upon commencement of operation of the works:

(a) Grab samples of pond effluent ahead of the Golf Course spray irrigation system shall be collected, at locations satisfactory to the *District Manager* and analysed for at least the following parameters at the beginning of the spray irrigation period and monthly thereafter:

<u>Pond Effluent Parameter</u>	<u>Frequency</u>
BOD ₅	monthly
Suspended Solids	monthly
Total Phosphorus	monthly
Total Kjeldahl Nitrogen	monthly
(Ammonia + Ammonium) Nitrogen	monthly
E. Coli	monthly

(b) The following monitoring program (as outlined in Table 1.0 of Report entitled "Blue Mountain Resorts/Intrawest, East Tributary Watercourse # 6 - Drainage System, Operations & Maintenance Manual" dated March 2006 (revised January 2007) and revised per letter dated May 18, 2011, all prepared by C.C. Tatham & Associates Ltd., Consulting Engineers) shall be carried out upon the issuance of this *Approval*.

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Table 2			
Category	Location	Parameter	Frequency
Water Quality	Village Mill Pond, Golf Course Pond # 2 outlet	Total Suspended Solids pH, dissolved oxygen, conductivity, Phosphorus, Total Coliforms, E.Coli	monthly during irrigation season (May- Sept)
Fish Habitat	Village Mill Pond, immediately downstream of Grey Road 19	fish habitat/species, photographic record, benthic invertebrate	once every five (5) years
Water Quantity	Golf Course Pond # 2 outlet	flow (m ³ /d)	continuous
Water Quantity (snowmaking & irrigation)	Nottawasaga Bay, Village Mill Pond, Golf Course Pond # 2	flow (m ³ /d)	during water taking
Sediment Accumulation	Golf Course Pond # 3	cubic metres	once every five (5) years

(c) The sampling and analyses required by clause (a) and (b) above shall be performed in accordance with the Ministry's Procedure F-10; "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater", Ministry of Environment, January 1999; or as described in "Standard Methods for Examination of Water and Wastewater", 20th Edition, 1998, or a more recently published edition.

(d) An annual investigation of the channel between Grey Road 21 and 19 by a qualified person that is sufficient to affirm that discharge from the Works has not harmfully altered or disrupted the natural functions of the watercourse.

5.2 The Owner shall retain for a minimum of three years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

5.3 Following review of any of the analytical results required by Condition 5.1, the District Manager may alter the frequencies and locations of sampling and parameters for analysis if he/she considers it necessary for proper assessment of the operation of the works and its impact on the environment and human health or if he/she is requested to do so by the Owner and considers it acceptable by the evidence of information submitted in support of the request.

6. OPERATION AND MAINTENANCE

6.1 Following review of the analytical results required by Condition 5.1 especially with regard to E. Coli, the District Manager may review irrigation periods, impose additional restrictions and/or require corrective action, if deemed necessary.

7. REPORTING

7.1 The Owner shall report to the District Manager any exceedance of the parameter specified in Condition No. 4.1 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedance.

7.2 The Owner shall prepare, and upon request, submit to the District Manager annual performance report for the Golf Course spray irrigation system. Annual report shall be prepared within ninety (90) calendar days following the completion of the calendar year being reported upon. The reports shall contain the following information in a format acceptable to the District Manager:

(a) a tabulation of all monitoring and analytical results obtained during the reporting period, including sampling/monitoring location and date;

(b) a record of the operation of the spray irrigation system, including dates and hours of operation and areas utilized;

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(c) an evaluation of the results of the monitoring requirements outlined in Condition No. 5 and assessment of the overall health of the drainage system and its components.

7.3 The Owner shall prepare and submit to the District Manager annual evaluations of sediment accumulation in Golf Course Pond #3 that shall include, when deemed necessary by the Owner or as directed by the Ministry, proposals to undertake sediment recovery and disposal.

8. RECORD KEEPING

The *Owner* shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation, and maintenance and monitoring activities required by this *Approval*.

Schedule 'A' forms part of this *Approval* and contains a list of supporting documentation/information received, reviewed and relied upon in the issuance of this *Approval*.

Schedule 'A'

1. Application for Approval of Sewage Works dated June 2, 2011 submitted by Dan Hurley, P. Eng., Manager, Water Resources, C.C. Tatham & Associates Ltd., Consulting Engineers.
2. Application for Approval of Municipal and Private Sewage Works submitted by Craig Watters, Vice President, Intrawest Corporation dated September 29, 2005.
3. Report entitled "Blue Mountain Resorts/Intrawest, East Tributary Watercourse # 6, Drainage System Assessment" dated September 2005 prepared by C.C. Tatham & Associates Ltd., Consulting Engineers.
4. Report entitled "Blue Mountain Resorts/Intrawest, East Tributary Watercourse # 6- Drainage System, Operations & Maintenance Manual" dated March 2006 (revised January 2007) prepared by C.C. Tatham & Associates Ltd., Consulting Engineers.
5. Design Report dated December 1999 and final plans prepared by C.C. Tatham & Associates Limited, Consulting Engineers.

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

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this Approval the existence of this *Approval*.
2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.
4. Conditions 4 through 7 relating to performance, monitoring, operation and reporting the quality of the effluent from the storm water retention pond are required to enable the Owner to evaluate the performance of the works and to ensure that it is operated and maintained to minimize the health risk associated with storm water spray irrigation onto Golf Course and surrounding land.
5. Condition 5 is included to require that all records are retained for a sufficient time period to adequately evaluate the long-

CONTENT COPY OF ORIGINAL

term operation and maintenance of the *Works*.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 8855-738HDG issued on June 15, 2007.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

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

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at:
Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 3rd day of April, 2012

Mansoor Mahmood, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

HV/
c: District Manager, MOE Owen Sound District Office
Dan Hurley, P.Eng., C.C. Tatham & Associates Ltd.

Appendix B: Existing Conditions

Project Details

Discovery Center Relocation	125001-01
-----------------------------	-----------

Prepared By

KB	Nov./25
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Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed	GSCA
Catchment ID	A7A
Catchment Area (ha)	3.45
Impervious %	57%
Pervious Area (ha)	1.48

Average Curve Number (CN) & Initial Abstraction (IA) for Pervious Area

Soil Symbol	Duc			
Soil Series	Dunedin			
Hydrologic Soils Group	D			
Soil Texture	Clay Loam or Clay			
Runoff Coefficient Type	3			
Area (ha)	1.48			
Percentage of Catchment	100%			

Land Cover Category	IA	A (ha)	CN	A (ha)	CN	A (ha)	CN	A (ha)	CN
Impervious	2	0.65	100						
Gravel	3		89						
Woodland	10		79						
Pasture/Lawns	5	0.83	84						
Meadows	8		81						
Cultivated	7		86						
Waterbody	12		50						
Average CN			90.81						
Average IA			3.67						

Summary

Catchment CN:	90.8
---------------	------

Catchment IA (mm):	3.67
--------------------	------

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Project Details

Discovery Center Relocation	125001-01
-----------------------------	-----------

Prepared By

KB	Nov./25
----	---------

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed	GSCA
Catchment ID	A7B
Catchment Area (ha)	5.82
Impervious %	53%
Pervious Area (ha)	2.74

Average Curve Number (CN) & Initial Abstraction (IA) for Pervious Area

Soil Symbol	Duc			
Soil Series	Dunedin			
Hydrologic Soils Group	D			
Soil Texture	Clay Loam or Clay			
Runoff Coefficient Type	3			
Area (ha)	2.74			
Percentage of Catchment	100%			

Land Cover Category	IA	A (ha)	CN	A (ha)	CN	A (ha)	CN	A (ha)	CN
Impervious	2	1.48	100						
Gravel	3	0.19	89						
Woodland	10		79						
Pasture/Lawns	5	1.07	84						
Meadows	8		81						
Cultivated	7		86						
Waterbody	12		50						
Average CN		93.15							
Average IA		3.25							

Summary

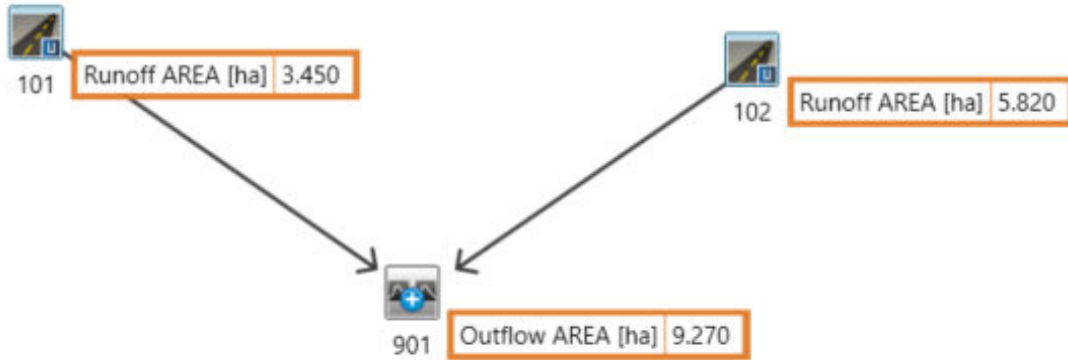
Catchment CN:	93.1
---------------	------

Catchment IA (mm):	3.25
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Notes

CN and IA values have been calculated for the pervious area of the catchment only.

PROJECT	Existing Discovery Center The Town of The Blue Mountains	FILE	125001
		DATE	11/1/2025
SUBJECT	Visual OTTHYMO Schematic Pre-Development	NAME	K Belanger
		PAGE	1 OF 1



NASHYD



ROUTE PIPE



DUHYD



STANDHYD



ROUTE CHANNEL



DIVERT HYD



ADDHYD



ROUTE RESERVOIR

=====

V V I SSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 VV I SSSS UUUU A A LLLLL

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

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

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

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0BF8B14-D4AA-429F-ADE8-FACF37FDEE83\B8735CC7-1C3B-4457-AE87-E326C00A1CF6\SC
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0BF8B14-D4AA-429F-ADE8-FACF37FDEE83\B8735CC7-1C3B-4457-AE87-E326C00A1CF6\SC

DATE: 12/05/2025 TIME: 02:17:22

USER:

COMMENTS: _____

 ** SIMULATION : Run 01 **

 | READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
 | |

527a07a2-2692-4383-b67d-fa21afc76061\bc43cc68
 | Ptotal= 53.62 mm | Comments: 2yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	0.97	12.50	7.72	18.75	0.97
0.25	0.59	6.50	0.97	12.75	3.97	19.00	0.97
0.50	0.59	6.75	0.97	13.00	3.97	19.25	0.97
0.75	0.59	7.00	0.97	13.25	2.90	19.50	0.97
1.00	0.59	7.25	1.18	13.50	2.90	19.75	0.97
1.25	0.59	7.50	1.18	13.75	2.25	20.00	0.97
1.50	0.59	7.75	1.18	14.00	2.25	20.25	0.64
1.75	0.59	8.00	1.18	14.25	1.61	20.50	0.64
2.00	0.59	8.25	1.39	14.50	1.61	20.75	0.64
2.25	0.70	8.50	1.39	14.75	1.61	21.00	0.64
2.50	0.70	8.75	1.50	15.00	1.61	21.25	0.64
2.75	0.70	9.00	1.50	15.25	1.61	21.50	0.64
3.00	0.70	9.25	1.72	15.50	1.61	21.75	0.64
3.25	0.70	9.50	1.72	15.75	1.61	22.00	0.64
3.50	0.70	9.75	1.93	16.00	1.61	22.25	0.64
3.75	0.70	10.00	1.93	16.25	0.97	22.50	0.64
4.00	0.70	10.25	2.47	16.50	0.97	22.75	0.64
4.25	0.86	10.50	2.47	16.75	0.97	23.00	0.64
4.50	0.86	10.75	3.32	17.00	0.97	23.25	0.64
4.75	0.86	11.00	3.32	17.25	0.97	23.50	0.64
5.00	0.86	11.25	5.15	17.50	0.97	23.75	0.64
5.25	0.86	11.50	5.15	17.75	0.97	24.00	0.64
5.50	0.86	11.75	15.87	18.00	0.97		
5.75	0.86	12.00	65.63	18.25	0.97		
6.00	0.86	12.25	7.72	18.50	0.97		

 | CALIB |
 | STANDHYD (0101) | Area (ha)= 3.45
 | ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 1.97	1.48
Dep. Storage	(mm)= 1.00	3.67
Average Slope	(%)= 1.00	2.00
Length	(m)= 151.66	40.00
Mannings n	= 0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.86	12.250	65.63	18.33	0.97
0.167	0.00	6.250	0.86	12.333	7.73	18.42	0.97
0.250	0.00	6.333	0.97	12.417	7.72	18.50	0.97
0.333	0.59	6.417	0.97	12.500	7.72	18.58	0.97
0.417	0.59	6.500	0.97	12.583	7.72	18.67	0.97
0.500	0.59	6.583	0.97	12.667	7.72	18.75	0.97
0.583	0.59	6.667	0.97	12.750	7.72	18.83	0.97
0.667	0.59	6.750	0.97	12.833	3.97	18.92	0.97
0.750	0.59	6.833	0.97	12.917	3.97	19.00	0.97
0.833	0.59	6.917	0.97	13.000	3.97	19.08	0.97
0.917	0.59	7.000	0.97	13.083	3.97	19.17	0.97
1.000	0.59	7.083	0.97	13.167	3.97	19.25	0.97
1.083	0.59	7.167	0.97	13.250	3.97	19.33	0.97
1.167	0.59	7.250	0.97	13.333	2.90	19.42	0.97
1.250	0.59	7.333	1.18	13.417	2.90	19.50	0.97
1.333	0.59	7.417	1.18	13.500	2.90	19.58	0.97
1.417	0.59	7.500	1.18	13.583	2.90	19.67	0.97
1.500	0.59	7.583	1.18	13.667	2.90	19.75	0.97
1.583	0.59	7.667	1.18	13.750	2.90	19.83	0.97
1.667	0.59	7.750	1.18	13.833	2.25	19.92	0.97
1.750	0.59	7.833	1.18	13.917	2.25	20.00	0.97
1.833	0.59	7.917	1.18	14.000	2.25	20.08	0.97
1.917	0.59	8.000	1.18	14.083	2.25	20.17	0.97
2.000	0.59	8.083	1.18	14.167	2.25	20.25	0.97
2.083	0.59	8.167	1.18	14.250	2.25	20.33	0.64
2.167	0.59	8.250	1.18	14.333	1.61	20.42	0.64
2.250	0.59	8.333	1.39	14.417	1.61	20.50	0.64
2.333	0.70	8.417	1.39	14.500	1.61	20.58	0.64
2.417	0.70	8.500	1.39	14.583	1.61	20.67	0.64
2.500	0.70	8.583	1.39	14.667	1.61	20.75	0.64
2.583	0.70	8.667	1.39	14.750	1.61	20.83	0.64
2.667	0.70	8.750	1.39	14.833	1.61	20.92	0.64
2.750	0.70	8.833	1.50	14.917	1.61	21.00	0.64
2.833	0.70	8.917	1.50	15.000	1.61	21.08	0.64
2.917	0.70	9.000	1.50	15.083	1.61	21.17	0.64
3.000	0.70	9.083	1.50	15.167	1.61	21.25	0.64
3.083	0.70	9.167	1.50	15.250	1.61	21.33	0.64
3.167	0.70	9.250	1.50	15.333	1.61	21.42	0.64
3.250	0.70	9.333	1.72	15.417	1.61	21.50	0.64
3.333	0.70	9.417	1.72	15.500	1.61	21.58	0.64
3.417	0.70	9.500	1.72	15.583	1.61	21.67	0.64
3.500	0.70	9.583	1.72	15.667	1.61	21.75	0.64
3.583	0.70	9.667	1.72	15.750	1.61	21.83	0.64
3.667	0.70	9.750	1.72	15.833	1.61	21.92	0.64
3.750	0.70	9.833	1.93	15.917	1.61	22.00	0.64
3.833	0.70	9.917	1.93	16.000	1.61	22.08	0.64
3.917	0.70	10.000	1.93	16.083	1.61	22.17	0.64
4.000	0.70	10.083	1.93	16.167	1.61	22.25	0.64
4.083	0.70	10.167	1.93	16.250	1.61	22.33	0.64

4.167	0.70	10.250	1.93	16.333	0.97	22.42	0.64
4.250	0.70	10.333	2.47	16.417	0.97	22.50	0.64
4.333	0.86	10.417	2.47	16.500	0.97	22.58	0.64
4.417	0.86	10.500	2.47	16.583	0.97	22.67	0.64
4.500	0.86	10.583	2.47	16.667	0.97	22.75	0.64
4.583	0.86	10.667	2.47	16.750	0.97	22.83	0.64
4.667	0.86	10.750	2.47	16.833	0.97	22.92	0.64
4.750	0.86	10.833	3.32	16.917	0.97	23.00	0.64
4.833	0.86	10.917	3.32	17.000	0.97	23.08	0.64
4.917	0.86	11.000	3.32	17.083	0.97	23.17	0.64
5.000	0.86	11.083	3.32	17.167	0.97	23.25	0.64
5.083	0.86	11.167	3.32	17.250	0.97	23.33	0.64
5.167	0.86	11.250	3.32	17.333	0.97	23.42	0.64
5.250	0.86	11.333	5.15	17.417	0.97	23.50	0.64
5.333	0.86	11.417	5.15	17.500	0.97	23.58	0.64
5.417	0.86	11.500	5.15	17.583	0.97	23.67	0.64
5.500	0.86	11.583	5.15	17.667	0.97	23.75	0.64
5.583	0.86	11.667	5.15	17.750	0.97	23.83	0.64
5.667	0.86	11.750	5.15	17.833	0.97	23.92	0.64
5.750	0.86	11.833	15.87	17.917	0.97	24.00	0.64
5.833	0.86	11.917	15.87	18.000	0.97	24.08	0.64
5.917	0.86	12.000	15.87	18.083	0.97	24.17	0.64
6.000	0.86	12.083	65.62	18.167	0.97	24.25	0.64
6.083	0.86	12.167	65.63	18.250	0.97		

Max.Eff.Inten.(mm/hr)= 65.63 63.78
over (min) 5.00 15.00
Storage Coeff. (min)= 3.88 (ii) 12.33 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.08

TOTALS
PEAK FLOW (cms)= 0.30 0.16 0.441 (iii)
TIME TO PEAK (hrs)= 12.25 12.33 12.25
RUNOFF VOLUME (mm)= 52.62 35.61 43.77
TOTAL RAINFALL (mm)= 53.62 53.62 53.62
RUNOFF COEFFICIENT = 0.98 0.66 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

 IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 3.08 2.74
 Dep. Storage (mm)= 1.00 3.25
 Average Slope (%)= 1.00 2.00
 Length (m)= 196.98 40.00
 Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.86	12.250	65.63	18.33	0.97
0.167	0.00	6.250	0.86	12.333	7.73	18.42	0.97
0.250	0.00	6.333	0.97	12.417	7.72	18.50	0.97
0.333	0.59	6.417	0.97	12.500	7.72	18.58	0.97
0.417	0.59	6.500	0.97	12.583	7.72	18.67	0.97
0.500	0.59	6.583	0.97	12.667	7.72	18.75	0.97
0.583	0.59	6.667	0.97	12.750	7.72	18.83	0.97
0.667	0.59	6.750	0.97	12.833	3.97	18.92	0.97
0.750	0.59	6.833	0.97	12.917	3.97	19.00	0.97
0.833	0.59	6.917	0.97	13.000	3.97	19.08	0.97
0.917	0.59	7.000	0.97	13.083	3.97	19.17	0.97
1.000	0.59	7.083	0.97	13.167	3.97	19.25	0.97
1.083	0.59	7.167	0.97	13.250	3.97	19.33	0.97
1.167	0.59	7.250	0.97	13.333	2.90	19.42	0.97
1.250	0.59	7.333	1.18	13.417	2.90	19.50	0.97
1.333	0.59	7.417	1.18	13.500	2.90	19.58	0.97
1.417	0.59	7.500	1.18	13.583	2.90	19.67	0.97
1.500	0.59	7.583	1.18	13.667	2.90	19.75	0.97
1.583	0.59	7.667	1.18	13.750	2.90	19.83	0.97
1.667	0.59	7.750	1.18	13.833	2.25	19.92	0.97
1.750	0.59	7.833	1.18	13.917	2.25	20.00	0.97
1.833	0.59	7.917	1.18	14.000	2.25	20.08	0.97
1.917	0.59	8.000	1.18	14.083	2.25	20.17	0.97
2.000	0.59	8.083	1.18	14.167	2.25	20.25	0.97
2.083	0.59	8.167	1.18	14.250	2.25	20.33	0.64
2.167	0.59	8.250	1.18	14.333	1.61	20.42	0.64
2.250	0.59	8.333	1.39	14.417	1.61	20.50	0.64
2.333	0.70	8.417	1.39	14.500	1.61	20.58	0.64
2.417	0.70	8.500	1.39	14.583	1.61	20.67	0.64
2.500	0.70	8.583	1.39	14.667	1.61	20.75	0.64
2.583	0.70	8.667	1.39	14.750	1.61	20.83	0.64
2.667	0.70	8.750	1.39	14.833	1.61	20.92	0.64
2.750	0.70	8.833	1.50	14.917	1.61	21.00	0.64
2.833	0.70	8.917	1.50	15.000	1.61	21.08	0.64
2.917	0.70	9.000	1.50	15.083	1.61	21.17	0.64
3.000	0.70	9.083	1.50	15.167	1.61	21.25	0.64

3.083	0.70	9.167	1.50	15.250	1.61	21.33	0.64
3.167	0.70	9.250	1.50	15.333	1.61	21.42	0.64
3.250	0.70	9.333	1.72	15.417	1.61	21.50	0.64
3.333	0.70	9.417	1.72	15.500	1.61	21.58	0.64
3.417	0.70	9.500	1.72	15.583	1.61	21.67	0.64
3.500	0.70	9.583	1.72	15.667	1.61	21.75	0.64
3.583	0.70	9.667	1.72	15.750	1.61	21.83	0.64
3.667	0.70	9.750	1.72	15.833	1.61	21.92	0.64
3.750	0.70	9.833	1.93	15.917	1.61	22.00	0.64
3.833	0.70	9.917	1.93	16.000	1.61	22.08	0.64
3.917	0.70	10.000	1.93	16.083	1.61	22.17	0.64
4.000	0.70	10.083	1.93	16.167	1.61	22.25	0.64
4.083	0.70	10.167	1.93	16.250	1.61	22.33	0.64
4.167	0.70	10.250	1.93	16.333	0.97	22.42	0.64
4.250	0.70	10.333	2.47	16.417	0.97	22.50	0.64
4.333	0.86	10.417	2.47	16.500	0.97	22.58	0.64
4.417	0.86	10.500	2.47	16.583	0.97	22.67	0.64
4.500	0.86	10.583	2.47	16.667	0.97	22.75	0.64
4.583	0.86	10.667	2.47	16.750	0.97	22.83	0.64
4.667	0.86	10.750	2.47	16.833	0.97	22.92	0.64
4.750	0.86	10.833	3.32	16.917	0.97	23.00	0.64
4.833	0.86	10.917	3.32	17.000	0.97	23.08	0.64
4.917	0.86	11.000	3.32	17.083	0.97	23.17	0.64
5.000	0.86	11.083	3.32	17.167	0.97	23.25	0.64
5.083	0.86	11.167	3.32	17.250	0.97	23.33	0.64
5.167	0.86	11.250	3.32	17.333	0.97	23.42	0.64
5.250	0.86	11.333	5.15	17.417	0.97	23.50	0.64
5.333	0.86	11.417	5.15	17.500	0.97	23.58	0.64
5.417	0.86	11.500	5.15	17.583	0.97	23.67	0.64
5.500	0.86	11.583	5.15	17.667	0.97	23.75	0.64
5.583	0.86	11.667	5.15	17.750	0.97	23.83	0.64
5.667	0.86	11.750	5.15	17.833	0.97	23.92	0.64
5.750	0.86	11.833	15.87	17.917	0.97	24.00	0.64
5.833	0.86	11.917	15.87	18.000	0.97	24.08	0.64
5.917	0.86	12.000	15.87	18.083	0.97	24.17	0.64
6.000	0.86	12.083	65.62	18.167	0.97	24.25	0.64
6.083	0.86	12.167	65.63	18.250	0.97		
Max. Eff. Inten. (mm/hr)=		65.63		79.29			
over (min)		5.00		15.00			
Storage Coeff. (min)=		4.54 (ii)		12.29 (ii)			
Unit Hyd. Tpeak (min)=		5.00		15.00			
Unit Hyd. peak (cms)=		0.23		0.09			
							TOTALS
PEAK FLOW (cms)=		0.37		0.38			0.712 (iii)
TIME TO PEAK (hrs)=		12.25		12.33			12.25
RUNOFF VOLUME (mm)=		52.62		40.35			44.76
TOTAL RAINFALL (mm)=		53.62		53.62			53.62
RUNOFF COEFFICIENT =		0.98		0.75			0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0101):  3.45  0.441  12.25  43.77
+ ID2= 2 ( 0102):  5.82  0.712  12.25  44.76
-----
      ID = 3 ( 0901):  9.27  1.153  12.25  44.39
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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=====

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V  V  I  SSSSS  U  U  A  L          (v 6.2.2019)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  A  A  A  L
V  V  I  SS    U  U  A  A  L
VV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0 0  T  T  H  H  Y  Y  MM  MM  0 0
0 0  T  T  H  H  Y  M  M  0 0
000  T  T  H  H  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\699

d533f-68cd-4a8c-9f1e-6099c7fe0a0b\sc

Summary filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\699
 d533f-68cd-4a8c-9f1e-6099c7fe0a0b\sc

DATE: 12/05/2025

TIME: 02:17:21

USER:

COMMENTS: _____

```

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

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-----
| READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
|            | 527a07a2-2692-4383-b67d-fa21afc76061\c4dc9d16
| Ptotal= 71.58 mm | Comments: 5yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.29	12.50	10.31	18.75	1.29
0.25	0.79	6.50	1.29	12.75	5.30	19.00	1.29
0.50	0.79	6.75	1.29	13.00	5.30	19.25	1.29
0.75	0.79	7.00	1.29	13.25	3.87	19.50	1.29
1.00	0.79	7.25	1.57	13.50	3.87	19.75	1.29
1.25	0.79	7.50	1.57	13.75	3.01	20.00	1.29
1.50	0.79	7.75	1.57	14.00	3.01	20.25	0.86
1.75	0.79	8.00	1.57	14.25	2.15	20.50	0.86
2.00	0.79	8.25	1.86	14.50	2.15	20.75	0.86
2.25	0.93	8.50	1.86	14.75	2.15	21.00	0.86
2.50	0.93	8.75	2.00	15.00	2.15	21.25	0.86
2.75	0.93	9.00	2.00	15.25	2.15	21.50	0.86
3.00	0.93	9.25	2.29	15.50	2.15	21.75	0.86
3.25	0.93	9.50	2.29	15.75	2.15	22.00	0.86
3.50	0.93	9.75	2.58	16.00	2.15	22.25	0.86
3.75	0.93	10.00	2.58	16.25	1.29	22.50	0.86
4.00	0.93	10.25	3.29	16.50	1.29	22.75	0.86
4.25	1.15	10.50	3.29	16.75	1.29	23.00	0.86
4.50	1.15	10.75	4.44	17.00	1.29	23.25	0.86
4.75	1.15	11.00	4.44	17.25	1.29	23.50	0.86

5.00	1.15	11.25	6.87	17.50	1.29	23.75	0.86
5.25	1.15	11.50	6.87	17.75	1.29	24.00	0.86
5.50	1.15	11.75	21.19	18.00	1.29		
5.75	1.15	12.00	87.61	18.25	1.29		
6.00	1.15	12.25	10.31	18.50	1.29		

2.083	0.79	8.167	1.57	14.250	3.01	20.33	0.86
2.167	0.79	8.250	1.57	14.333	2.15	20.42	0.86
2.250	0.79	8.333	1.86	14.417	2.15	20.50	0.86
2.333	0.93	8.417	1.86	14.500	2.15	20.58	0.86
2.417	0.93	8.500	1.86	14.583	2.15	20.67	0.86
2.500	0.93	8.583	1.86	14.667	2.15	20.75	0.86
2.583	0.93	8.667	1.86	14.750	2.15	20.83	0.86
2.667	0.93	8.750	1.86	14.833	2.15	20.92	0.86
2.750	0.93	8.833	2.00	14.917	2.15	21.00	0.86
2.833	0.93	8.917	2.00	15.000	2.15	21.08	0.86
2.917	0.93	9.000	2.00	15.083	2.15	21.17	0.86
3.000	0.93	9.083	2.00	15.167	2.15	21.25	0.86
3.083	0.93	9.167	2.00	15.250	2.15	21.33	0.86
3.167	0.93	9.250	2.00	15.333	2.15	21.42	0.86
3.250	0.93	9.333	2.29	15.417	2.15	21.50	0.86
3.333	0.93	9.417	2.29	15.500	2.15	21.58	0.86
3.417	0.93	9.500	2.29	15.583	2.15	21.67	0.86
3.500	0.93	9.583	2.29	15.667	2.15	21.75	0.86
3.583	0.93	9.667	2.29	15.750	2.15	21.83	0.86
3.667	0.93	9.750	2.29	15.833	2.15	21.92	0.86
3.750	0.93	9.833	2.58	15.917	2.15	22.00	0.86
3.833	0.93	9.917	2.58	16.000	2.15	22.08	0.86
3.917	0.93	10.000	2.58	16.083	2.15	22.17	0.86
4.000	0.93	10.083	2.58	16.167	2.15	22.25	0.86
4.083	0.93	10.167	2.58	16.250	2.15	22.33	0.86
4.167	0.93	10.250	2.58	16.333	1.29	22.42	0.86
4.250	0.93	10.333	3.29	16.417	1.29	22.50	0.86
4.333	1.15	10.417	3.29	16.500	1.29	22.58	0.86
4.417	1.15	10.500	3.29	16.583	1.29	22.67	0.86
4.500	1.15	10.583	3.29	16.667	1.29	22.75	0.86
4.583	1.15	10.667	3.29	16.750	1.29	22.83	0.86
4.667	1.15	10.750	3.29	16.833	1.29	22.92	0.86
4.750	1.15	10.833	4.44	16.917	1.29	23.00	0.86
4.833	1.15	10.917	4.44	17.000	1.29	23.08	0.86
4.917	1.15	11.000	4.44	17.083	1.29	23.17	0.86
5.000	1.15	11.083	4.44	17.167	1.29	23.25	0.86
5.083	1.15	11.167	4.44	17.250	1.29	23.33	0.86
5.167	1.15	11.250	4.44	17.333	1.29	23.42	0.86
5.250	1.15	11.333	6.87	17.417	1.29	23.50	0.86
5.333	1.15	11.417	6.87	17.500	1.29	23.58	0.86
5.417	1.15	11.500	6.87	17.583	1.29	23.67	0.86
5.500	1.15	11.583	6.87	17.667	1.29	23.75	0.86
5.583	1.15	11.667	6.87	17.750	1.29	23.83	0.86
5.667	1.15	11.750	6.87	17.833	1.29	23.92	0.86
5.750	1.15	11.833	21.19	17.917	1.29	24.00	0.86
5.833	1.15	11.917	21.19	18.000	1.29	24.08	0.86
5.917	1.15	12.000	21.19	18.083	1.29	24.17	0.86
6.000	1.15	12.083	87.61	18.167	1.29	24.25	0.86
6.083	1.15	12.167	87.61	18.250	1.29		

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

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.15	12.250	87.61	18.33	1.29
0.167	0.00	6.250	1.15	12.333	10.32	18.42	1.29
0.250	0.00	6.333	1.29	12.417	10.31	18.50	1.29
0.333	0.79	6.417	1.29	12.500	10.31	18.58	1.29
0.417	0.79	6.500	1.29	12.583	10.31	18.67	1.29
0.500	0.79	6.583	1.29	12.667	10.31	18.75	1.29
0.583	0.79	6.667	1.29	12.750	10.31	18.83	1.29
0.667	0.79	6.750	1.29	12.833	5.30	18.92	1.29
0.750	0.79	6.833	1.29	12.917	5.30	19.00	1.29
0.833	0.79	6.917	1.29	13.000	5.30	19.08	1.29
0.917	0.79	7.000	1.29	13.083	5.30	19.17	1.29
1.000	0.79	7.083	1.29	13.167	5.30	19.25	1.29
1.083	0.79	7.167	1.29	13.250	5.30	19.33	1.29
1.167	0.79	7.250	1.29	13.333	3.87	19.42	1.29
1.250	0.79	7.333	1.57	13.417	3.87	19.50	1.29
1.333	0.79	7.417	1.57	13.500	3.87	19.58	1.29
1.417	0.79	7.500	1.57	13.583	3.87	19.67	1.29
1.500	0.79	7.583	1.57	13.667	3.87	19.75	1.29
1.583	0.79	7.667	1.57	13.750	3.87	19.83	1.29
1.667	0.79	7.750	1.57	13.833	3.01	19.92	1.29
1.750	0.79	7.833	1.57	13.917	3.01	20.00	1.29
1.833	0.79	7.917	1.57	14.000	3.01	20.08	1.29
1.917	0.79	8.000	1.57	14.083	3.01	20.17	1.29
2.000	0.79	8.083	1.57	14.167	3.01	20.25	1.29

Max.Eff.Inten.(mm/hr)= 87.61 91.66
 over (min) 5.00 15.00
 Storage Coeff. (min)= 3.46 (ii) 10.77 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.26 0.09

TOTALS
 PEAK FLOW (cms)= 0.40 0.25 0.624 (iii)
 TIME TO PEAK (hrs)= 12.25 12.33 12.25
 RUNOFF VOLUME (mm)= 70.58 52.31 61.08
 TOTAL RAINFALL (mm)= 71.58 71.58 71.58
 RUNOFF COEFFICIENT = 0.99 0.73 0.85

1.000	0.79	7.083	1.29	13.167	5.30	19.25	1.29
1.083	0.79	7.167	1.29	13.250	5.30	19.33	1.29
1.167	0.79	7.250	1.29	13.333	3.87	19.42	1.29
1.250	0.79	7.333	1.57	13.417	3.87	19.50	1.29
1.333	0.79	7.417	1.57	13.500	3.87	19.58	1.29
1.417	0.79	7.500	1.57	13.583	3.87	19.67	1.29
1.500	0.79	7.583	1.57	13.667	3.87	19.75	1.29
1.583	0.79	7.667	1.57	13.750	3.87	19.83	1.29
1.667	0.79	7.750	1.57	13.833	3.01	19.92	1.29
1.750	0.79	7.833	1.57	13.917	3.01	20.00	1.29
1.833	0.79	7.917	1.57	14.000	3.01	20.08	1.29
1.917	0.79	8.000	1.57	14.083	3.01	20.17	1.29
2.000	0.79	8.083	1.57	14.167	3.01	20.25	1.29
2.083	0.79	8.167	1.57	14.250	3.01	20.33	0.86
2.167	0.79	8.250	1.57	14.333	2.15	20.42	0.86
2.250	0.79	8.333	1.86	14.417	2.15	20.50	0.86
2.333	0.93	8.417	1.86	14.500	2.15	20.58	0.86
2.417	0.93	8.500	1.86	14.583	2.15	20.67	0.86
2.500	0.93	8.583	1.86	14.667	2.15	20.75	0.86
2.583	0.93	8.667	1.86	14.750	2.15	20.83	0.86
2.667	0.93	8.750	1.86	14.833	2.15	20.92	0.86
2.750	0.93	8.833	2.00	14.917	2.15	21.00	0.86
2.833	0.93	8.917	2.00	15.000	2.15	21.08	0.86
2.917	0.93	9.000	2.00	15.083	2.15	21.17	0.86
3.000	0.93	9.083	2.00	15.167	2.15	21.25	0.86
3.083	0.93	9.167	2.00	15.250	2.15	21.33	0.86
3.167	0.93	9.250	2.00	15.333	2.15	21.42	0.86
3.250	0.93	9.333	2.29	15.417	2.15	21.50	0.86
3.333	0.93	9.417	2.29	15.500	2.15	21.58	0.86
3.417	0.93	9.500	2.29	15.583	2.15	21.67	0.86
3.500	0.93	9.583	2.29	15.667	2.15	21.75	0.86
3.583	0.93	9.667	2.29	15.750	2.15	21.83	0.86
3.667	0.93	9.750	2.29	15.833	2.15	21.92	0.86
3.750	0.93	9.833	2.58	15.917	2.15	22.00	0.86
3.833	0.93	9.917	2.58	16.000	2.15	22.08	0.86
3.917	0.93	10.000	2.58	16.083	2.15	22.17	0.86
4.000	0.93	10.083	2.58	16.167	2.15	22.25	0.86
4.083	0.93	10.167	2.58	16.250	2.15	22.33	0.86
4.167	0.93	10.250	2.58	16.333	1.29	22.42	0.86
4.250	0.93	10.333	3.29	16.417	1.29	22.50	0.86
4.333	1.15	10.417	3.29	16.500	1.29	22.58	0.86
4.417	1.15	10.500	3.29	16.583	1.29	22.67	0.86
4.500	1.15	10.583	3.29	16.667	1.29	22.75	0.86
4.583	1.15	10.667	3.29	16.750	1.29	22.83	0.86
4.667	1.15	10.750	3.29	16.833	1.29	22.92	0.86
4.750	1.15	10.833	4.44	16.917	1.29	23.00	0.86
4.833	1.15	10.917	4.44	17.000	1.29	23.08	0.86
4.917	1.15	11.000	4.44	17.083	1.29	23.17	0.86
5.000	1.15	11.083	4.44	17.167	1.29	23.25	0.86
5.083	1.15	11.167	4.44	17.250	1.29	23.33	0.86

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | CALIB |
 | STANDHYD (0102) | Area (ha)= 5.82
 | ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.15	12.250	87.61	18.33	1.29
0.167	0.00	6.250	1.15	12.333	10.32	18.42	1.29
0.250	0.00	6.333	1.29	12.417	10.31	18.50	1.29
0.333	0.79	6.417	1.29	12.500	10.31	18.58	1.29
0.417	0.79	6.500	1.29	12.583	10.31	18.67	1.29
0.500	0.79	6.583	1.29	12.667	10.31	18.75	1.29
0.583	0.79	6.667	1.29	12.750	10.31	18.83	1.29
0.667	0.79	6.750	1.29	12.833	5.30	18.92	1.29
0.750	0.79	6.833	1.29	12.917	5.30	19.00	1.29
0.833	0.79	6.917	1.29	13.000	5.30	19.08	1.29
0.917	0.79	7.000	1.29	13.083	5.30	19.17	1.29

5.167	1.15	11.250	4.44	17.333	1.29	23.42	0.86
5.250	1.15	11.333	6.87	17.417	1.29	23.50	0.86
5.333	1.15	11.417	6.87	17.500	1.29	23.58	0.86
5.417	1.15	11.500	6.87	17.583	1.29	23.67	0.86
5.500	1.15	11.583	6.87	17.667	1.29	23.75	0.86
5.583	1.15	11.667	6.87	17.750	1.29	23.83	0.86
5.667	1.15	11.750	6.87	17.833	1.29	23.92	0.86
5.750	1.15	11.833	21.19	17.917	1.29	24.00	0.86
5.833	1.15	11.917	21.19	18.000	1.29	24.08	0.86
5.917	1.15	12.000	21.19	18.083	1.29	24.17	0.86
6.000	1.15	12.083	87.61	18.167	1.29	24.25	0.86
6.083	1.15	12.167	87.61	18.250	1.29		

Max.Eff.Inten.(mm/hr)= 87.61 110.56
over (min) 5.00 15.00
Storage Coeff. (min)= 4.05 (ii) 10.83 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.24 0.09

TOTALS
PEAK FLOW (cms)= 0.50 0.57 1.013 (iii)
TIME TO PEAK (hrs)= 12.25 12.33 12.25
RUNOFF VOLUME (mm)= 70.58 57.67 62.32
TOTAL RAINFALL (mm)= 71.58 71.58 71.58
RUNOFF COEFFICIENT = 0.99 0.81 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----
          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0101):  3.45  0.624  12.25  61.08
+ ID2= 2 ( 0102):  5.82  1.013  12.25  62.32
=====
ID = 3 ( 0901):  9.27  1.637  12.25  61.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2019)

```

V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUUU A A LLLLL

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

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\fbf8b14-d4aa-429f-ade8-fac37fdee83\b5d
b0e19-3b55-404d-9165-48221f7d50ef\sc
Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\fbf8b14-d4aa-429f-ade8-fac37fdee83\b5d
b0e19-3b55-404d-9165-48221f7d50ef\sc

DATE: 12/05/2025 TIME: 02:17:21

USER:

COMMENTS: _____

```

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

```

```

-----
| READ STORM | Filename: C:\Users\kbelanger\AppData
|            |   ata\Local\Temp\
|            |   527a07a2-2692-4383-b67d-fa21afc76061\1e608f10
| Ptotal= 83.29 mm | Comments: 10yr 24hr 15min SCS Type II
-----

```

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.50	12.50	11.99	18.75	1.50
0.25	0.92	6.50	1.50	12.75	6.16	19.00	1.50
0.50	0.92	6.75	1.50	13.00	6.16	19.25	1.50
0.75	0.92	7.00	1.50	13.25	4.50	19.50	1.50
1.00	0.92	7.25	1.83	13.50	4.50	19.75	1.50
1.25	0.92	7.50	1.83	13.75	3.50	20.00	1.50
1.50	0.92	7.75	1.83	14.00	3.50	20.25	1.00
1.75	0.92	8.00	1.83	14.25	2.50	20.50	1.00
2.00	0.92	8.25	2.17	14.50	2.50	20.75	1.00
2.25	1.08	8.50	2.17	14.75	2.50	21.00	1.00
2.50	1.08	8.75	2.33	15.00	2.50	21.25	1.00
2.75	1.08	9.00	2.33	15.25	2.50	21.50	1.00
3.00	1.08	9.25	2.67	15.50	2.50	21.75	1.00
3.25	1.08	9.50	2.67	15.75	2.50	22.00	1.00
3.50	1.08	9.75	3.00	16.00	2.50	22.25	1.00
3.75	1.08	10.00	3.00	16.25	1.50	22.50	1.00
4.00	1.08	10.25	3.83	16.50	1.50	22.75	1.00
4.25	1.33	10.50	3.83	16.75	1.50	23.00	1.00
4.50	1.33	10.75	5.16	17.00	1.50	23.25	1.00
4.75	1.33	11.00	5.16	17.25	1.50	23.50	1.00
5.00	1.33	11.25	8.00	17.50	1.50	23.75	1.00
5.25	1.33	11.50	8.00	17.75	1.50	24.00	1.00
5.50	1.33	11.75	24.65	18.00	1.50		
5.75	1.33	12.00	101.95	18.25	1.50		
6.00	1.33	12.25	11.99	18.50	1.50		

0.333	0.92	6.417	1.50	12.500	11.99	18.58	1.50
0.417	0.92	6.500	1.50	12.583	11.99	18.67	1.50
0.500	0.92	6.583	1.50	12.667	11.99	18.75	1.50
0.583	0.92	6.667	1.50	12.750	11.99	18.83	1.50
0.667	0.92	6.750	1.50	12.833	6.16	18.92	1.50
0.750	0.92	6.833	1.50	12.917	6.16	19.00	1.50
0.833	0.92	6.917	1.50	13.000	6.16	19.08	1.50
0.917	0.92	7.000	1.50	13.083	6.16	19.17	1.50
1.000	0.92	7.083	1.50	13.167	6.16	19.25	1.50
1.083	0.92	7.167	1.50	13.250	6.16	19.33	1.50
1.167	0.92	7.250	1.50	13.333	4.50	19.42	1.50
1.250	0.92	7.333	1.83	13.417	4.50	19.50	1.50
1.333	0.92	7.417	1.83	13.500	4.50	19.58	1.50
1.417	0.92	7.500	1.83	13.583	4.50	19.67	1.50
1.500	0.92	7.583	1.83	13.667	4.50	19.75	1.50
1.583	0.92	7.667	1.83	13.750	4.50	19.83	1.50
1.667	0.92	7.750	1.83	13.833	3.50	19.92	1.50
1.750	0.92	7.833	1.83	13.917	3.50	20.00	1.50
1.833	0.92	7.917	1.83	14.000	3.50	20.08	1.50
1.917	0.92	8.000	1.83	14.083	3.50	20.17	1.50
2.000	0.92	8.083	1.83	14.167	3.50	20.25	1.50
2.083	0.92	8.167	1.83	14.250	3.50	20.33	1.00
2.167	0.92	8.250	1.83	14.333	2.50	20.42	1.00
2.250	0.92	8.333	2.17	14.417	2.50	20.50	1.00
2.333	1.08	8.417	2.17	14.500	2.50	20.58	1.00
2.417	1.08	8.500	2.17	14.583	2.50	20.67	1.00
2.500	1.08	8.583	2.17	14.667	2.50	20.75	1.00
2.583	1.08	8.667	2.17	14.750	2.50	20.83	1.00
2.667	1.08	8.750	2.17	14.833	2.50	20.92	1.00
2.750	1.08	8.833	2.33	14.917	2.50	21.00	1.00
2.833	1.08	8.917	2.33	15.000	2.50	21.08	1.00
2.917	1.08	9.000	2.33	15.083	2.50	21.17	1.00
3.000	1.08	9.083	2.33	15.167	2.50	21.25	1.00
3.083	1.08	9.167	2.33	15.250	2.50	21.33	1.00
3.167	1.08	9.250	2.33	15.333	2.50	21.42	1.00
3.250	1.08	9.333	2.67	15.417	2.50	21.50	1.00
3.333	1.08	9.417	2.67	15.500	2.50	21.58	1.00
3.417	1.08	9.500	2.67	15.583	2.50	21.67	1.00
3.500	1.08	9.583	2.67	15.667	2.50	21.75	1.00
3.583	1.08	9.667	2.67	15.750	2.50	21.83	1.00
3.667	1.08	9.750	2.67	15.833	2.50	21.92	1.00
3.750	1.08	9.833	3.00	15.917	2.50	22.00	1.00
3.833	1.08	9.917	3.00	16.000	2.50	22.08	1.00
3.917	1.08	10.000	3.00	16.083	2.50	22.17	1.00
4.000	1.08	10.083	3.00	16.167	2.50	22.25	1.00
4.083	1.08	10.167	3.00	16.250	2.50	22.33	1.00
4.167	1.08	10.250	3.00	16.333	1.50	22.42	1.00
4.250	1.08	10.333	3.83	16.417	1.50	22.50	1.00
4.333	1.33	10.417	3.83	16.500	1.50	22.58	1.00
4.417	1.33	10.500	3.83	16.583	1.50	22.67	1.00

 CALIB
 STANDHYD (0101)
 ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.33	12.250	101.95	18.33	1.50
0.167	0.00	6.250	1.33	12.333	12.01	18.42	1.50
0.250	0.00	6.333	1.50	12.417	11.99	18.50	1.50

4.500	1.33	10.583	3.83	16.667	1.50	22.75	1.00
4.583	1.33	10.667	3.83	16.750	1.50	22.83	1.00
4.667	1.33	10.750	3.83	16.833	1.50	22.92	1.00
4.750	1.33	10.833	5.16	16.917	1.50	23.00	1.00
4.833	1.33	10.917	5.16	17.000	1.50	23.08	1.00
4.917	1.33	11.000	5.16	17.083	1.50	23.17	1.00
5.000	1.33	11.083	5.16	17.167	1.50	23.25	1.00
5.083	1.33	11.167	5.16	17.250	1.50	23.33	1.00
5.167	1.33	11.250	5.16	17.333	1.50	23.42	1.00
5.250	1.33	11.333	8.00	17.417	1.50	23.50	1.00
5.333	1.33	11.417	8.00	17.500	1.50	23.58	1.00
5.417	1.33	11.500	8.00	17.583	1.50	23.67	1.00
5.500	1.33	11.583	8.00	17.667	1.50	23.75	1.00
5.583	1.33	11.667	8.00	17.750	1.50	23.83	1.00
5.667	1.33	11.750	8.00	17.833	1.50	23.92	1.00
5.750	1.33	11.833	24.65	17.917	1.50	24.00	1.00
5.833	1.33	11.917	24.65	18.000	1.50	24.08	1.00
5.917	1.33	12.000	24.65	18.083	1.50	24.17	1.00
6.000	1.33	12.083	101.94	18.167	1.50	24.25	1.00
6.083	1.33	12.167	101.95	18.250	1.50		

Average Slope (%)= 1.00 2.00
Length (m)= 196.98 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.33	12.250	101.95	18.33	1.50
0.167	0.00	6.250	1.33	12.333	12.01	18.42	1.50
0.250	0.00	6.333	1.50	12.417	11.99	18.50	1.50
0.333	0.92	6.417	1.50	12.500	11.99	18.58	1.50
0.417	0.92	6.500	1.50	12.583	11.99	18.67	1.50
0.500	0.92	6.583	1.50	12.667	11.99	18.75	1.50
0.583	0.92	6.667	1.50	12.750	11.99	18.83	1.50
0.667	0.92	6.750	1.50	12.833	6.16	18.92	1.50
0.750	0.92	6.833	1.50	12.917	6.16	19.00	1.50
0.833	0.92	6.917	1.50	13.000	6.16	19.08	1.50
0.917	0.92	7.000	1.50	13.083	6.16	19.17	1.50
1.000	0.92	7.083	1.50	13.167	6.16	19.25	1.50
1.083	0.92	7.167	1.50	13.250	6.16	19.33	1.50
1.167	0.92	7.250	1.50	13.333	4.50	19.42	1.50
1.250	0.92	7.333	1.83	13.417	4.50	19.50	1.50
1.333	0.92	7.417	1.83	13.500	4.50	19.58	1.50
1.417	0.92	7.500	1.83	13.583	4.50	19.67	1.50
1.500	0.92	7.583	1.83	13.667	4.50	19.75	1.50
1.583	0.92	7.667	1.83	13.750	4.50	19.83	1.50
1.667	0.92	7.750	1.83	13.833	3.50	19.92	1.50
1.750	0.92	7.833	1.83	13.917	3.50	20.00	1.50
1.833	0.92	7.917	1.83	14.000	3.50	20.08	1.50
1.917	0.92	8.000	1.83	14.083	3.50	20.17	1.50
2.000	0.92	8.083	1.83	14.167	3.50	20.25	1.50
2.083	0.92	8.167	1.83	14.250	3.50	20.33	1.00
2.167	0.92	8.250	1.83	14.333	2.50	20.42	1.00
2.250	0.92	8.333	2.17	14.417	2.50	20.50	1.00
2.333	1.08	8.417	2.17	14.500	2.50	20.58	1.00
2.417	1.08	8.500	2.17	14.583	2.50	20.67	1.00
2.500	1.08	8.583	2.17	14.667	2.50	20.75	1.00
2.583	1.08	8.667	2.17	14.750	2.50	20.83	1.00
2.667	1.08	8.750	2.17	14.833	2.50	20.92	1.00
2.750	1.08	8.833	2.33	14.917	2.50	21.00	1.00
2.833	1.08	8.917	2.33	15.000	2.50	21.08	1.00
2.917	1.08	9.000	2.33	15.083	2.50	21.17	1.00
3.000	1.08	9.083	2.33	15.167	2.50	21.25	1.00
3.083	1.08	9.167	2.33	15.250	2.50	21.33	1.00
3.167	1.08	9.250	2.33	15.333	2.50	21.42	1.00
3.250	1.08	9.333	2.67	15.417	2.50	21.50	1.00
3.333	1.08	9.417	2.67	15.500	2.50	21.58	1.00

Max. Eff. Inten. (mm/hr)= 101.95 109.83
over (min) 5.00 15.00
Storage Coeff. (min)= 3.25 (ii) 10.05 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.10

TOTALS
0.747 (iii)
12.25
63.43 72.48
83.29 83.29
0.76 0.87

PEAK FLOW (cms)= 0.47 0.31
TIME TO PEAK (hrs)= 12.25 12.33
RUNOFF VOLUME (mm)= 82.29 63.43 72.48
TOTAL RAINFALL (mm)= 83.29 83.29 83.29
RUNOFF COEFFICIENT = 0.99 0.76 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.08 2.74
Dep. Storage (mm)= 1.00 3.25

3.417	1.08	9.500	2.67	15.583	2.50	21.67	1.00
3.500	1.08	9.583	2.67	15.667	2.50	21.75	1.00
3.583	1.08	9.667	2.67	15.750	2.50	21.83	1.00
3.667	1.08	9.750	2.67	15.833	2.50	21.92	1.00
3.750	1.08	9.833	3.00	15.917	2.50	22.00	1.00
3.833	1.08	9.917	3.00	16.000	2.50	22.08	1.00
3.917	1.08	10.000	3.00	16.083	2.50	22.17	1.00
4.000	1.08	10.083	3.00	16.167	2.50	22.25	1.00
4.083	1.08	10.167	3.00	16.250	2.50	22.33	1.00
4.167	1.08	10.250	3.00	16.333	1.50	22.42	1.00
4.250	1.08	10.333	3.83	16.417	1.50	22.50	1.00
4.333	1.33	10.417	3.83	16.500	1.50	22.58	1.00
4.417	1.33	10.500	3.83	16.583	1.50	22.67	1.00
4.500	1.33	10.583	3.83	16.667	1.50	22.75	1.00
4.583	1.33	10.667	3.83	16.750	1.50	22.83	1.00
4.667	1.33	10.750	3.83	16.833	1.50	22.92	1.00
4.750	1.33	10.833	5.16	16.917	1.50	23.00	1.00
4.833	1.33	10.917	5.16	17.000	1.50	23.08	1.00
4.917	1.33	11.000	5.16	17.083	1.50	23.17	1.00
5.000	1.33	11.083	5.16	17.167	1.50	23.25	1.00
5.083	1.33	11.167	5.16	17.250	1.50	23.33	1.00
5.167	1.33	11.250	5.16	17.333	1.50	23.42	1.00
5.250	1.33	11.333	8.00	17.417	1.50	23.50	1.00
5.333	1.33	11.417	8.00	17.500	1.50	23.58	1.00
5.417	1.33	11.500	8.00	17.583	1.50	23.67	1.00
5.500	1.33	11.583	8.00	17.667	1.50	23.75	1.00
5.583	1.33	11.667	8.00	17.750	1.50	23.83	1.00
5.667	1.33	11.750	8.00	17.833	1.50	23.92	1.00
5.750	1.33	11.833	24.65	17.917	1.50	24.00	1.00
5.833	1.33	11.917	24.65	18.000	1.50	24.08	1.00
5.917	1.33	12.000	24.65	18.083	1.50	24.17	1.00
6.000	1.33	12.083	101.94	18.167	1.50	24.25	1.00
6.083	1.33	12.167	101.95	18.250	1.50		

Max.Eff.Inten.(mm/hr)= 101.95 130.81
over (min) 5.00 15.00
Storage Coeff. (min)= 3.81 (ii) 10.15 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.10

PEAK FLOW (cms)= 0.58 0.69
TIME TO PEAK (hrs)= 12.25 12.33 12.25
RUNOFF VOLUME (mm)= 82.29 69.10 73.84
TOTAL RAINFALL (mm)= 83.29 83.29 83.29
RUNOFF COEFFICIENT = 0.99 0.83 0.89

TOTALS

1.212 (iii)
73.84
83.29
0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901)|
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0101):  3.45  0.747  12.25  72.48
+ ID2= 2 ( 0102):  5.82  1.212  12.25  73.84
=====
ID = 3 ( 0901):  9.27  1.959  12.25  73.34

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V  V  I  SSSSS  U  U  A  L          (v 6.2.2019)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
W  W  I  SSSSS  UUUUU  A  A  LLLLL

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\03b00885-505b-452d-8e41-758e84407b4e\sc
Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\03b00885-505b-452d-8e41-758e84407b4e\sc

DATE: 12/05/2025

TIME: 02:17:21

USER:

COMMENTS: _____

```

-----
| CALIB |
| STANDHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 3.45
Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.97 1.48
Dep. Storage (mm)= 1.00 3.67
Average Slope (%)= 1.00 2.00
Length (m)= 151.66 40.00
Mannings n = 0.013 0.250

```

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

```

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

```

```

-----
| READ STORM |
| |
| Ptotal= 98.13 mm |
| |
-----
Filename: C:\Users\kbelanger\AppData
          ata\Local\Temp\
          527a07a2-2692-4383-b67d-fa21afc76061\086c3262
Comments: 25yr 24hr 15min SCS Type II

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.77	12.50	14.13	18.75	1.77
0.25	1.08	6.50	1.77	12.75	7.26	19.00	1.77
0.50	1.08	6.75	1.77	13.00	7.26	19.25	1.77
0.75	1.08	7.00	1.77	13.25	5.30	19.50	1.77
1.00	1.08	7.25	2.16	13.50	5.30	19.75	1.77
1.25	1.08	7.50	2.16	13.75	4.12	20.00	1.77
1.50	1.08	7.75	2.16	14.00	4.12	20.25	1.18
1.75	1.08	8.00	2.16	14.25	2.94	20.50	1.18
2.00	1.08	8.25	2.55	14.50	2.94	20.75	1.18
2.25	1.28	8.50	2.55	14.75	2.94	21.00	1.18
2.50	1.28	8.75	2.75	15.00	2.94	21.25	1.18
2.75	1.28	9.00	2.75	15.25	2.94	21.50	1.18
3.00	1.28	9.25	3.14	15.50	2.94	21.75	1.18
3.25	1.28	9.50	3.14	15.75	2.94	22.00	1.18
3.50	1.28	9.75	3.53	16.00	2.94	22.25	1.18
3.75	1.28	10.00	3.53	16.25	1.77	22.50	1.18
4.00	1.28	10.25	4.51	16.50	1.77	22.75	1.18
4.25	1.57	10.50	4.51	16.75	1.77	23.00	1.18
4.50	1.57	10.75	6.08	17.00	1.77	23.25	1.18
4.75	1.57	11.00	6.08	17.25	1.77	23.50	1.18
5.00	1.57	11.25	9.42	17.50	1.77	23.75	1.18
5.25	1.57	11.50	9.42	17.75	1.77	24.00	1.18
5.50	1.57	11.75	29.05	18.00	1.77		
5.75	1.57	12.00	120.11	18.25	1.77		
6.00	1.57	12.25	14.13	18.50	1.77		

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.57	12.250	120.11	18.33	1.77
0.167	0.00	6.250	1.57	12.333	14.14	18.42	1.77
0.250	0.00	6.333	1.77	12.417	14.13	18.50	1.77
0.333	1.08	6.417	1.77	12.500	14.13	18.58	1.77
0.417	1.08	6.500	1.77	12.583	14.13	18.67	1.77
0.500	1.08	6.583	1.77	12.667	14.13	18.75	1.77
0.583	1.08	6.667	1.77	12.750	14.13	18.83	1.77
0.667	1.08	6.750	1.77	12.833	7.26	18.92	1.77
0.750	1.08	6.833	1.77	12.917	7.26	19.00	1.77
0.833	1.08	6.917	1.77	13.000	7.26	19.08	1.77
0.917	1.08	7.000	1.77	13.083	7.26	19.17	1.77
1.000	1.08	7.083	1.77	13.167	7.26	19.25	1.77
1.083	1.08	7.167	1.77	13.250	7.26	19.33	1.77
1.167	1.08	7.250	1.77	13.333	5.30	19.42	1.77
1.250	1.08	7.333	2.16	13.417	5.30	19.50	1.77
1.333	1.08	7.417	2.16	13.500	5.30	19.58	1.77
1.417	1.08	7.500	2.16	13.583	5.30	19.67	1.77
1.500	1.08	7.583	2.16	13.667	5.30	19.75	1.77
1.583	1.08	7.667	2.16	13.750	5.30	19.83	1.77
1.667	1.08	7.750	2.16	13.833	4.12	19.92	1.77
1.750	1.08	7.833	2.16	13.917	4.12	20.00	1.77
1.833	1.08	7.917	2.16	14.000	4.12	20.08	1.77
1.917	1.08	8.000	2.16	14.083	4.12	20.17	1.77
2.000	1.08	8.083	2.16	14.167	4.12	20.25	1.77
2.083	1.08	8.167	2.16	14.250	4.12	20.33	1.18
2.167	1.08	8.250	2.16	14.333	2.94	20.42	1.18
2.250	1.08	8.333	2.55	14.417	2.94	20.50	1.18
2.333	1.28	8.417	2.55	14.500	2.94	20.58	1.18
2.417	1.28	8.500	2.55	14.583	2.94	20.67	1.18
2.500	1.28	8.583	2.55	14.667	2.94	20.75	1.18
2.583	1.28	8.667	2.55	14.750	2.94	20.83	1.18
2.667	1.28	8.750	2.55	14.833	2.94	20.92	1.18

2.750	1.28	8.833	2.75	14.917	2.94	21.00	1.18
2.833	1.28	8.917	2.75	15.000	2.94	21.08	1.18
2.917	1.28	9.000	2.75	15.083	2.94	21.17	1.18
3.000	1.28	9.083	2.75	15.167	2.94	21.25	1.18
3.083	1.28	9.167	2.75	15.250	2.94	21.33	1.18
3.167	1.28	9.250	2.75	15.333	2.94	21.42	1.18
3.250	1.28	9.333	3.14	15.417	2.94	21.50	1.18
3.333	1.28	9.417	3.14	15.500	2.94	21.58	1.18
3.417	1.28	9.500	3.14	15.583	2.94	21.67	1.18
3.500	1.28	9.583	3.14	15.667	2.94	21.75	1.18
3.583	1.28	9.667	3.14	15.750	2.94	21.83	1.18
3.667	1.28	9.750	3.14	15.833	2.94	21.92	1.18
3.750	1.28	9.833	3.53	15.917	2.94	22.00	1.18
3.833	1.28	9.917	3.53	16.000	2.94	22.08	1.18
3.917	1.28	10.000	3.53	16.083	2.94	22.17	1.18
4.000	1.28	10.083	3.53	16.167	2.94	22.25	1.18
4.083	1.28	10.167	3.53	16.250	2.94	22.33	1.18
4.167	1.28	10.250	3.53	16.333	1.77	22.42	1.18
4.250	1.28	10.333	4.51	16.417	1.77	22.50	1.18
4.333	1.57	10.417	4.51	16.500	1.77	22.58	1.18
4.417	1.57	10.500	4.51	16.583	1.77	22.67	1.18
4.500	1.57	10.583	4.51	16.667	1.77	22.75	1.18
4.583	1.57	10.667	4.51	16.750	1.77	22.83	1.18
4.667	1.57	10.750	4.51	16.833	1.77	22.92	1.18
4.750	1.57	10.833	6.08	16.917	1.77	23.00	1.18
4.833	1.57	10.917	6.08	17.000	1.77	23.08	1.18
4.917	1.57	11.000	6.08	17.083	1.77	23.17	1.18
5.000	1.57	11.083	6.08	17.167	1.77	23.25	1.18
5.083	1.57	11.167	6.08	17.250	1.77	23.33	1.18
5.167	1.57	11.250	6.08	17.333	1.77	23.42	1.18
5.250	1.57	11.333	9.42	17.417	1.77	23.50	1.18
5.333	1.57	11.417	9.42	17.500	1.77	23.58	1.18
5.417	1.57	11.500	9.42	17.583	1.77	23.67	1.18
5.500	1.57	11.583	9.42	17.667	1.77	23.75	1.18
5.583	1.57	11.667	9.42	17.750	1.77	23.83	1.18
5.667	1.57	11.750	9.42	17.833	1.77	23.92	1.18
5.750	1.57	11.833	29.04	17.917	1.77	24.00	1.18
5.833	1.57	11.917	29.05	18.000	1.77	24.08	1.18
5.917	1.57	12.000	29.05	18.083	1.77	24.17	1.18
6.000	1.57	12.083	120.10	18.167	1.77	24.25	1.18
6.083	1.57	12.167	120.11	18.250	1.77		

Max.Eff.Inten.(mm/hr)= 120.11 132.77
over (min) 5.00 10.00
Storage Coeff. (min)= 3.05 (ii) 9.35 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.12

TOTALS

PEAK FLOW (cms)= 0.55 0.41 0.963 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25

RUNOFF VOLUME (mm)= 97.13 77.70 87.03
TOTAL RAINFALL (mm)= 98.13 98.13 98.13
RUNOFF COEFFICIENT = 0.99 0.79 0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.57	12.250	120.11	18.33	1.77
0.167	0.00	6.250	1.57	12.333	14.14	18.42	1.77
0.250	0.00	6.333	1.77	12.417	14.13	18.50	1.77
0.333	1.08	6.417	1.77	12.500	14.13	18.58	1.77
0.417	1.08	6.500	1.77	12.583	14.13	18.67	1.77
0.500	1.08	6.583	1.77	12.667	14.13	18.75	1.77
0.583	1.08	6.667	1.77	12.750	14.13	18.83	1.77
0.667	1.08	6.750	1.77	12.833	7.26	18.92	1.77
0.750	1.08	6.833	1.77	12.917	7.26	19.00	1.77
0.833	1.08	6.917	1.77	13.000	7.26	19.08	1.77
0.917	1.08	7.000	1.77	13.083	7.26	19.17	1.77
1.000	1.08	7.083	1.77	13.167	7.26	19.25	1.77
1.083	1.08	7.167	1.77	13.250	7.26	19.33	1.77
1.167	1.08	7.250	1.77	13.333	5.30	19.42	1.77
1.250	1.08	7.333	2.16	13.417	5.30	19.50	1.77
1.333	1.08	7.417	2.16	13.500	5.30	19.58	1.77
1.417	1.08	7.500	2.16	13.583	5.30	19.67	1.77
1.500	1.08	7.583	2.16	13.667	5.30	19.75	1.77
1.583	1.08	7.667	2.16	13.750	5.30	19.83	1.77

1.667	1.08	7.750	2.16	13.833	4.12	19.92	1.77
1.750	1.08	7.833	2.16	13.917	4.12	20.00	1.77
1.833	1.08	7.917	2.16	14.000	4.12	20.08	1.77
1.917	1.08	8.000	2.16	14.083	4.12	20.17	1.77
2.000	1.08	8.083	2.16	14.167	4.12	20.25	1.77
2.083	1.08	8.167	2.16	14.250	4.12	20.33	1.18
2.167	1.08	8.250	2.16	14.333	2.94	20.42	1.18
2.250	1.08	8.333	2.55	14.417	2.94	20.50	1.18
2.333	1.28	8.417	2.55	14.500	2.94	20.58	1.18
2.417	1.28	8.500	2.55	14.583	2.94	20.67	1.18
2.500	1.28	8.583	2.55	14.667	2.94	20.75	1.18
2.583	1.28	8.667	2.55	14.750	2.94	20.83	1.18
2.667	1.28	8.750	2.55	14.833	2.94	20.92	1.18
2.750	1.28	8.833	2.75	14.917	2.94	21.00	1.18
2.833	1.28	8.917	2.75	15.000	2.94	21.08	1.18
2.917	1.28	9.000	2.75	15.083	2.94	21.17	1.18
3.000	1.28	9.083	2.75	15.167	2.94	21.25	1.18
3.083	1.28	9.167	2.75	15.250	2.94	21.33	1.18
3.167	1.28	9.250	2.75	15.333	2.94	21.42	1.18
3.250	1.28	9.333	3.14	15.417	2.94	21.50	1.18
3.333	1.28	9.417	3.14	15.500	2.94	21.58	1.18
3.417	1.28	9.500	3.14	15.583	2.94	21.67	1.18
3.500	1.28	9.583	3.14	15.667	2.94	21.75	1.18
3.583	1.28	9.667	3.14	15.750	2.94	21.83	1.18
3.667	1.28	9.750	3.14	15.833	2.94	21.92	1.18
3.750	1.28	9.833	3.53	15.917	2.94	22.00	1.18
3.833	1.28	9.917	3.53	16.000	2.94	22.08	1.18
3.917	1.28	10.000	3.53	16.083	2.94	22.17	1.18
4.000	1.28	10.083	3.53	16.167	2.94	22.25	1.18
4.083	1.28	10.167	3.53	16.250	2.94	22.33	1.18
4.167	1.28	10.250	3.53	16.333	1.77	22.42	1.18
4.250	1.28	10.333	4.51	16.417	1.77	22.50	1.18
4.333	1.57	10.417	4.51	16.500	1.77	22.58	1.18
4.417	1.57	10.500	4.51	16.583	1.77	22.67	1.18
4.500	1.57	10.583	4.51	16.667	1.77	22.75	1.18
4.583	1.57	10.667	4.51	16.750	1.77	22.83	1.18
4.667	1.57	10.750	4.51	16.833	1.77	22.92	1.18
4.750	1.57	10.833	6.08	16.917	1.77	23.00	1.18
4.833	1.57	10.917	6.08	17.000	1.77	23.08	1.18
4.917	1.57	11.000	6.08	17.083	1.77	23.17	1.18
5.000	1.57	11.083	6.08	17.167	1.77	23.25	1.18
5.083	1.57	11.167	6.08	17.250	1.77	23.33	1.18
5.167	1.57	11.250	6.08	17.333	1.77	23.42	1.18
5.250	1.57	11.333	9.42	17.417	1.77	23.50	1.18
5.333	1.57	11.417	9.42	17.500	1.77	23.58	1.18
5.417	1.57	11.500	9.42	17.583	1.77	23.67	1.18
5.500	1.57	11.583	9.42	17.667	1.77	23.75	1.18
5.583	1.57	11.667	9.42	17.750	1.77	23.83	1.18
5.667	1.57	11.750	9.42	17.833	1.77	23.92	1.18
5.750	1.57	11.833	29.04	17.917	1.77	24.00	1.18

5.833	1.57	11.917	29.05	18.000	1.77	24.08	1.18
5.917	1.57	12.000	29.05	18.083	1.77	24.17	1.18
6.000	1.57	12.083	120.10	18.167	1.77	24.25	1.18
6.083	1.57	12.167	120.11	18.250	1.77		

Max.Eff.Inten.(mm/hr)= 120.11 156.32
over (min) 5.00 10.00
Storage Coeff. (min)= 3.57 (ii) 9.47 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.12

TOTALS
PEAK FLOW (cms)= 0.69 0.90 1.594 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 97.13 83.66 88.51
TOTAL RAINFALL (mm)= 98.13 98.13 98.13
RUNOFF COEFFICIENT = 0.99 0.85 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
----- (ha) (cms) (hrs) (mm)
ID1= 1 ( 0101): 3.45 0.963 12.25 87.03
+ ID2= 2 ( 0102): 5.82 1.594 12.25 88.51
=====
ID = 3 ( 0901): 9.27 2.558 12.25 87.96

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

```

```

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

```

000 T T H H Y M M 000
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYM0 6.2\VO2\voin.dat

Output filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\fb0bf8b14-d4aa-429f-ade8-facf37fdee83\72d444f9-bdcf-4c69-9856-492d7dda5f51\sc

Summary filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\fb0bf8b14-d4aa-429f-ade8-facf37fdee83\72d444f9-bdcf-4c69-9856-492d7dda5f51\sc

1.75	1.20	8.00	2.41	14.25	3.28	20.50	1.31
2.00	1.20	8.25	2.84	14.50	3.28	20.75	1.31
2.25	1.42	8.50	2.84	14.75	3.28	21.00	1.31
2.50	1.42	8.75	3.06	15.00	3.28	21.25	1.31
2.75	1.42	9.00	3.06	15.25	3.28	21.50	1.31
3.00	1.42	9.25	3.50	15.50	3.28	21.75	1.31
3.25	1.42	9.50	3.50	15.75	3.28	22.00	1.31
3.50	1.42	9.75	3.94	16.00	3.28	22.25	1.31
3.75	1.42	10.00	3.94	16.25	1.97	22.50	1.31
4.00	1.42	10.25	5.03	16.50	1.97	22.75	1.31
4.25	1.75	10.50	5.03	16.75	1.97	23.00	1.31
4.50	1.75	10.75	6.78	17.00	1.97	23.25	1.31
4.75	1.75	11.00	6.78	17.25	1.97	23.50	1.31
5.00	1.75	11.25	10.49	17.50	1.97	23.75	1.31
5.25	1.75	11.50	10.49	17.75	1.97	24.00	1.31
5.50	1.75	11.75	32.36	18.00	1.97		
5.75	1.75	12.00	133.81	18.25	1.97		
6.00	1.75	12.25	15.74	18.50	1.97		

DATE: 12/05/2025

TIME: 02:17:21

USER:

COMMENTS: _____

 | CALIB |
 | STANDHYD (0101) | Area (ha)= 3.45
 | ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

 | READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
 | | 527a07a2-2692-4383-b67d-fa21afc76061\23ba3bec
 | Ptotal=109.32 mm | Comments: 50yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.97	12.50	15.74	18.75	1.97
0.25	1.20	6.50	1.97	12.75	8.09	19.00	1.97
0.50	1.20	6.75	1.97	13.00	8.09	19.25	1.97
0.75	1.20	7.00	1.97	13.25	5.90	19.50	1.97
1.00	1.20	7.25	2.41	13.50	5.90	19.75	1.97
1.25	1.20	7.50	2.41	13.75	4.59	20.00	1.97
1.50	1.20	7.75	2.41	14.00	4.59	20.25	1.31

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.75	12.250	133.81	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.76	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.74	18.50	1.97
0.333	1.20	6.417	1.97	12.500	15.74	18.58	1.97
0.417	1.20	6.500	1.97	12.583	15.74	18.67	1.97
0.500	1.20	6.583	1.97	12.667	15.74	18.75	1.97
0.583	1.20	6.667	1.97	12.750	15.74	18.83	1.97
0.667	1.20	6.750	1.97	12.833	8.09	18.92	1.97
0.750	1.20	6.833	1.97	12.917	8.09	19.00	1.97
0.833	1.20	6.917	1.97	13.000	8.09	19.08	1.97
0.917	1.20	7.000	1.97	13.083	8.09	19.17	1.97

1.000	1.20	7.083	1.97	13.167	8.09	19.25	1.97
1.083	1.20	7.167	1.97	13.250	8.09	19.33	1.97
1.167	1.20	7.250	1.97	13.333	5.90	19.42	1.97
1.250	1.20	7.333	2.41	13.417	5.90	19.50	1.97
1.333	1.20	7.417	2.41	13.500	5.90	19.58	1.97
1.417	1.20	7.500	2.41	13.583	5.90	19.67	1.97
1.500	1.20	7.583	2.41	13.667	5.90	19.75	1.97
1.583	1.20	7.667	2.41	13.750	5.90	19.83	1.97
1.667	1.20	7.750	2.41	13.833	4.59	19.92	1.97
1.750	1.20	7.833	2.41	13.917	4.59	20.00	1.97
1.833	1.20	7.917	2.41	14.000	4.59	20.08	1.97
1.917	1.20	8.000	2.41	14.083	4.59	20.17	1.97
2.000	1.20	8.083	2.41	14.167	4.59	20.25	1.97
2.083	1.20	8.167	2.41	14.250	4.59	20.33	1.31
2.167	1.20	8.250	2.41	14.333	3.28	20.42	1.31
2.250	1.20	8.333	2.84	14.417	3.28	20.50	1.31
2.333	1.42	8.417	2.84	14.500	3.28	20.58	1.31
2.417	1.42	8.500	2.84	14.583	3.28	20.67	1.31
2.500	1.42	8.583	2.84	14.667	3.28	20.75	1.31
2.583	1.42	8.667	2.84	14.750	3.28	20.83	1.31
2.667	1.42	8.750	2.84	14.833	3.28	20.92	1.31
2.750	1.42	8.833	3.06	14.917	3.28	21.00	1.31
2.833	1.42	8.917	3.06	15.000	3.28	21.08	1.31
2.917	1.42	9.000	3.06	15.083	3.28	21.17	1.31
3.000	1.42	9.083	3.06	15.167	3.28	21.25	1.31
3.083	1.42	9.167	3.06	15.250	3.28	21.33	1.31
3.167	1.42	9.250	3.06	15.333	3.28	21.42	1.31
3.250	1.42	9.333	3.50	15.417	3.28	21.50	1.31
3.333	1.42	9.417	3.50	15.500	3.28	21.58	1.31
3.417	1.42	9.500	3.50	15.583	3.28	21.67	1.31
3.500	1.42	9.583	3.50	15.667	3.28	21.75	1.31
3.583	1.42	9.667	3.50	15.750	3.28	21.83	1.31
3.667	1.42	9.750	3.50	15.833	3.28	21.92	1.31
3.750	1.42	9.833	3.94	15.917	3.28	22.00	1.31
3.833	1.42	9.917	3.94	16.000	3.28	22.08	1.31
3.917	1.42	10.000	3.94	16.083	3.28	22.17	1.31
4.000	1.42	10.083	3.94	16.167	3.28	22.25	1.31
4.083	1.42	10.167	3.94	16.250	3.28	22.33	1.31
4.167	1.42	10.250	3.94	16.333	1.97	22.42	1.31
4.250	1.42	10.333	5.03	16.417	1.97	22.50	1.31
4.333	1.75	10.417	5.03	16.500	1.97	22.58	1.31
4.417	1.75	10.500	5.03	16.583	1.97	22.67	1.31
4.500	1.75	10.583	5.03	16.667	1.97	22.75	1.31
4.583	1.75	10.667	5.03	16.750	1.97	22.83	1.31
4.667	1.75	10.750	5.03	16.833	1.97	22.92	1.31
4.750	1.75	10.833	6.78	16.917	1.97	23.00	1.31
4.833	1.75	10.917	6.78	17.000	1.97	23.08	1.31
4.917	1.75	11.000	6.78	17.083	1.97	23.17	1.31
5.000	1.75	11.083	6.78	17.167	1.97	23.25	1.31
5.083	1.75	11.167	6.78	17.250	1.97	23.33	1.31

5.167	1.75	11.250	6.78	17.333	1.97	23.42	1.31
5.250	1.75	11.333	10.49	17.417	1.97	23.50	1.31
5.333	1.75	11.417	10.49	17.500	1.97	23.58	1.31
5.417	1.75	11.500	10.49	17.583	1.97	23.67	1.31
5.500	1.75	11.583	10.49	17.667	1.97	23.75	1.31
5.583	1.75	11.667	10.49	17.750	1.97	23.83	1.31
5.667	1.75	11.750	10.49	17.833	1.97	23.92	1.31
5.750	1.75	11.833	32.36	17.917	1.97	24.00	1.31
5.833	1.75	11.917	32.36	18.000	1.97	24.08	1.31
5.917	1.75	12.000	32.36	18.083	1.97	24.17	1.31
6.000	1.75	12.083	133.80	18.167	1.97	24.25	1.31
6.083	1.75	12.167	133.81	18.250	1.97		

Max. Eff. Inten. (mm/hr)= 133.81 150.01
over (min) 5.00 10.00
Storage Coeff. (min)= 2.92 (ii) 8.92 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.12

TOTALS
PEAK FLOW (cms)= 0.61 0.48 1.090 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 108.32 88.55 98.04
TOTAL RAINFALL (mm)= 109.32 109.32 109.32
RUNOFF COEFFICIENT = 0.99 0.81 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.75	12.250	133.81	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.76	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.74	18.50	1.97
0.333	1.20	6.417	1.97	12.500	15.74	18.58	1.97
0.417	1.20	6.500	1.97	12.583	15.74	18.67	1.97
0.500	1.20	6.583	1.97	12.667	15.74	18.75	1.97
0.583	1.20	6.667	1.97	12.750	15.74	18.83	1.97
0.667	1.20	6.750	1.97	12.833	8.09	18.92	1.97
0.750	1.20	6.833	1.97	12.917	8.09	19.00	1.97
0.833	1.20	6.917	1.97	13.000	8.09	19.08	1.97
0.917	1.20	7.000	1.97	13.083	8.09	19.17	1.97
1.000	1.20	7.083	1.97	13.167	8.09	19.25	1.97
1.083	1.20	7.167	1.97	13.250	8.09	19.33	1.97
1.167	1.20	7.250	1.97	13.333	5.90	19.42	1.97
1.250	1.20	7.333	2.41	13.417	5.90	19.50	1.97
1.333	1.20	7.417	2.41	13.500	5.90	19.58	1.97
1.417	1.20	7.500	2.41	13.583	5.90	19.67	1.97
1.500	1.20	7.583	2.41	13.667	5.90	19.75	1.97
1.583	1.20	7.667	2.41	13.750	5.90	19.83	1.97
1.667	1.20	7.750	2.41	13.833	4.59	19.92	1.97
1.750	1.20	7.833	2.41	13.917	4.59	20.00	1.97
1.833	1.20	7.917	2.41	14.000	4.59	20.08	1.97
1.917	1.20	8.000	2.41	14.083	4.59	20.17	1.97
2.000	1.20	8.083	2.41	14.167	4.59	20.25	1.97
2.083	1.20	8.167	2.41	14.250	4.59	20.33	1.31
2.167	1.20	8.250	2.41	14.333	3.28	20.42	1.31
2.250	1.20	8.333	2.84	14.417	3.28	20.50	1.31
2.333	1.42	8.417	2.84	14.500	3.28	20.58	1.31
2.417	1.42	8.500	2.84	14.583	3.28	20.67	1.31
2.500	1.42	8.583	2.84	14.667	3.28	20.75	1.31
2.583	1.42	8.667	2.84	14.750	3.28	20.83	1.31
2.667	1.42	8.750	2.84	14.833	3.28	20.92	1.31
2.750	1.42	8.833	3.06	14.917	3.28	21.00	1.31
2.833	1.42	8.917	3.06	15.000	3.28	21.08	1.31
2.917	1.42	9.000	3.06	15.083	3.28	21.17	1.31
3.000	1.42	9.083	3.06	15.167	3.28	21.25	1.31
3.083	1.42	9.167	3.06	15.250	3.28	21.33	1.31
3.167	1.42	9.250	3.06	15.333	3.28	21.42	1.31
3.250	1.42	9.333	3.50	15.417	3.28	21.50	1.31
3.333	1.42	9.417	3.50	15.500	3.28	21.58	1.31
3.417	1.42	9.500	3.50	15.583	3.28	21.67	1.31
3.500	1.42	9.583	3.50	15.667	3.28	21.75	1.31
3.583	1.42	9.667	3.50	15.750	3.28	21.83	1.31
3.667	1.42	9.750	3.50	15.833	3.28	21.92	1.31
3.750	1.42	9.833	3.94	15.917	3.28	22.00	1.31
3.833	1.42	9.917	3.94	16.000	3.28	22.08	1.31
3.917	1.42	10.000	3.94	16.083	3.28	22.17	1.31
4.000	1.42	10.083	3.94	16.167	3.28	22.25	1.31

4.083	1.42	10.167	3.94	16.250	3.28	22.33	1.31
4.167	1.42	10.250	3.94	16.333	1.97	22.42	1.31
4.250	1.42	10.333	5.03	16.417	1.97	22.50	1.31
4.333	1.75	10.417	5.03	16.500	1.97	22.58	1.31
4.417	1.75	10.500	5.03	16.583	1.97	22.67	1.31
4.500	1.75	10.583	5.03	16.667	1.97	22.75	1.31
4.583	1.75	10.667	5.03	16.750	1.97	22.83	1.31
4.667	1.75	10.750	5.03	16.833	1.97	22.92	1.31
4.750	1.75	10.833	6.78	16.917	1.97	23.00	1.31
4.833	1.75	10.917	6.78	17.000	1.97	23.08	1.31
4.917	1.75	11.000	6.78	17.083	1.97	23.17	1.31
5.000	1.75	11.083	6.78	17.167	1.97	23.25	1.31
5.083	1.75	11.167	6.78	17.250	1.97	23.33	1.31
5.167	1.75	11.250	6.78	17.333	1.97	23.42	1.31
5.250	1.75	11.333	10.49	17.417	1.97	23.50	1.31
5.333	1.75	11.417	10.49	17.500	1.97	23.58	1.31
5.417	1.75	11.500	10.49	17.583	1.97	23.67	1.31
5.500	1.75	11.583	10.49	17.667	1.97	23.75	1.31
5.583	1.75	11.667	10.49	17.750	1.97	23.83	1.31
5.667	1.75	11.750	10.49	17.833	1.97	23.92	1.31
5.750	1.75	11.833	32.36	17.917	1.97	24.00	1.31
5.833	1.75	11.917	32.36	18.000	1.97	24.08	1.31
5.917	1.75	12.000	32.36	18.083	1.97	24.17	1.31
6.000	1.75	12.083	133.80	18.167	1.97	24.25	1.31
6.083	1.75	12.167	133.81	18.250	1.97		
Max.Eff.Inten.(mm/hr)=		133.81	175.47				
over (min)		5.00	10.00				
Storage Coeff. (min)=		3.42 (ii)	9.05 (ii)				
Unit Hyd. Tpeak (min)=		5.00	10.00				
Unit Hyd. peak (cms)=		0.26	0.12				
				TOTALS			
PEAK FLOW (cms)=		0.77	1.03	1.805 (iii)			
TIME TO PEAK (hrs)=		12.25	12.25	12.25			
RUNOFF VOLUME (mm)=		108.32	94.69	99.60			
TOTAL RAINFALL (mm)=		109.32	109.32	109.32			
RUNOFF COEFFICIENT =		0.99	0.87	0.91			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0901)|

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.45	1.090	12.25	98.04
+ ID2= 2 (0102):	5.82	1.805	12.25	99.60
=====				
ID = 3 (0901):	9.27	2.895	12.25	99.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

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

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

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

Output filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\fhbf8b14-d4aa-429f-ade8-facf37fdee83\733
 b6186-482d-4a85-9b61-25327ffe75f5\sc

Summary filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\fhbf8b14-d4aa-429f-ade8-facf37fdee83\733
 b6186-482d-4a85-9b61-25327ffe75f5\sc

DATE: 12/05/2025

TIME: 02:17:21

USER:

COMMENTS: _____

 ** SIMULATION : Run 06 **

 READ STORM | Filename: C:\Users\kbelanger\AppData
 | | ata\Local\Temp\
 | | 527a07a2-2692-4383-b67d-fa21afc76061\1feaac38
 Ptotal=120.25 mm | Comments: 100yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	2.16	12.50	17.32	18.75	2.16
0.25	1.32	6.50	2.16	12.75	8.90	19.00	2.16
0.50	1.32	6.75	2.16	13.00	8.90	19.25	2.16
0.75	1.32	7.00	2.16	13.25	6.49	19.50	2.16
1.00	1.32	7.25	2.65	13.50	6.49	19.75	2.16
1.25	1.32	7.50	2.65	13.75	5.05	20.00	2.16
1.50	1.32	7.75	2.65	14.00	5.05	20.25	1.44
1.75	1.32	8.00	2.65	14.25	3.61	20.50	1.44
2.00	1.32	8.25	3.13	14.50	3.61	20.75	1.44
2.25	1.56	8.50	3.13	14.75	3.61	21.00	1.44
2.50	1.56	8.75	3.37	15.00	3.61	21.25	1.44
2.75	1.56	9.00	3.37	15.25	3.61	21.50	1.44
3.00	1.56	9.25	3.85	15.50	3.61	21.75	1.44
3.25	1.56	9.50	3.85	15.75	3.61	22.00	1.44
3.50	1.56	9.75	4.33	16.00	3.61	22.25	1.44
3.75	1.56	10.00	4.33	16.25	2.16	22.50	1.44
4.00	1.56	10.25	5.53	16.50	2.16	22.75	1.44
4.25	1.92	10.50	5.53	16.75	2.16	23.00	1.44
4.50	1.92	10.75	7.46	17.00	2.16	23.25	1.44
4.75	1.92	11.00	7.46	17.25	2.16	23.50	1.44
5.00	1.92	11.25	11.54	17.50	2.16	23.75	1.44
5.25	1.92	11.50	11.54	17.75	2.16	24.00	1.44
5.50	1.92	11.75	35.59	18.00	2.16		
5.75	1.92	12.00	147.19	18.25	2.16		
6.00	1.92	12.25	17.32	18.50	2.16		

 CALIB
 STANDHYD (0101) | Area (ha)= 3.45
 ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67

Average Slope (%)= 1.00 2.00
 Length (m)= 151.66 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	147.19	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.33	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.32	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.32	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.32	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.32	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.32	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.90	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.90	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.90	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.90	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.90	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.90	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.49	19.42	2.16
1.250	1.32	7.333	2.65	13.417	6.49	19.50	2.16
1.333	1.32	7.417	2.65	13.500	6.49	19.58	2.16
1.417	1.32	7.500	2.65	13.583	6.49	19.67	2.16
1.500	1.32	7.583	2.65	13.667	6.49	19.75	2.16
1.583	1.32	7.667	2.65	13.750	6.49	19.83	2.16
1.667	1.32	7.750	2.65	13.833	5.05	19.92	2.16
1.750	1.32	7.833	2.65	13.917	5.05	20.00	2.16
1.833	1.32	7.917	2.65	14.000	5.05	20.08	2.16
1.917	1.32	8.000	2.65	14.083	5.05	20.17	2.16
2.000	1.32	8.083	2.65	14.167	5.05	20.25	2.16
2.083	1.32	8.167	2.65	14.250	5.05	20.33	1.44
2.167	1.32	8.250	2.65	14.333	3.61	20.42	1.44
2.250	1.32	8.333	3.13	14.417	3.61	20.50	1.44
2.333	1.56	8.417	3.13	14.500	3.61	20.58	1.44
2.417	1.56	8.500	3.13	14.583	3.61	20.67	1.44
2.500	1.56	8.583	3.13	14.667	3.61	20.75	1.44
2.583	1.56	8.667	3.13	14.750	3.61	20.83	1.44
2.667	1.56	8.750	3.13	14.833	3.61	20.92	1.44
2.750	1.56	8.833	3.37	14.917	3.61	21.00	1.44
2.833	1.56	8.917	3.37	15.000	3.61	21.08	1.44
2.917	1.56	9.000	3.37	15.083	3.61	21.17	1.44
3.000	1.56	9.083	3.37	15.167	3.61	21.25	1.44
3.083	1.56	9.167	3.37	15.250	3.61	21.33	1.44
3.167	1.56	9.250	3.37	15.333	3.61	21.42	1.44
3.250	1.56	9.333	3.85	15.417	3.61	21.50	1.44
3.333	1.56	9.417	3.85	15.500	3.61	21.58	1.44

3.417	1.56	9.500	3.85	15.583	3.61	21.67	1.44
3.500	1.56	9.583	3.85	15.667	3.61	21.75	1.44
3.583	1.56	9.667	3.85	15.750	3.61	21.83	1.44
3.667	1.56	9.750	3.85	15.833	3.61	21.92	1.44
3.750	1.56	9.833	4.33	15.917	3.61	22.00	1.44
3.833	1.56	9.917	4.33	16.000	3.61	22.08	1.44
3.917	1.56	10.000	4.33	16.083	3.61	22.17	1.44
4.000	1.56	10.083	4.33	16.167	3.61	22.25	1.44
4.083	1.56	10.167	4.33	16.250	3.61	22.33	1.44
4.167	1.56	10.250	4.33	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.53	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.53	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.53	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.53	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.53	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.53	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.46	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.46	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.46	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.46	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.46	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.46	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.54	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.54	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.54	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.54	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.54	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.54	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.59	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.59	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.59	18.083	2.16	24.17	1.44
6.000	1.92	12.083	147.19	18.167	2.16	24.25	1.44
6.083	1.92	12.167	147.19	18.250	2.16		

Max.Eff.Inten.(mm/hr)= 147.19 166.79
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.81 (ii) 8.56 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.12

PEAK FLOW (cms)= 0.67 0.54
 TIME TO PEAK (hrs)= 12.25 12.25 12.25
 RUNOFF VOLUME (mm)= 119.25 99.20 108.82
 TOTAL RAINFALL (mm)= 120.25 120.25 120.25
 RUNOFF COEFFICIENT = 0.99 0.82 0.90

TOTALS
 1.214 (iii)

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

Area (ha)= 5.82
 Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	147.19	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.33	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.32	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.32	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.32	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.32	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.32	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.90	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.90	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.90	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.90	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.90	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.90	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.49	19.42	2.16
1.250	1.32	7.333	2.65	13.417	6.49	19.50	2.16
1.333	1.32	7.417	2.65	13.500	6.49	19.58	2.16
1.417	1.32	7.500	2.65	13.583	6.49	19.67	2.16
1.500	1.32	7.583	2.65	13.667	6.49	19.75	2.16
1.583	1.32	7.667	2.65	13.750	6.49	19.83	2.16
1.667	1.32	7.750	2.65	13.833	5.05	19.92	2.16
1.750	1.32	7.833	2.65	13.917	5.05	20.00	2.16
1.833	1.32	7.917	2.65	14.000	5.05	20.08	2.16
1.917	1.32	8.000	2.65	14.083	5.05	20.17	2.16
2.000	1.32	8.083	2.65	14.167	5.05	20.25	2.16
2.083	1.32	8.167	2.65	14.250	5.05	20.33	1.44
2.167	1.32	8.250	2.65	14.333	3.61	20.42	1.44
2.250	1.32	8.333	3.13	14.417	3.61	20.50	1.44

2.333	1.56	8.417	3.13	14.500	3.61	20.58	1.44
2.417	1.56	8.500	3.13	14.583	3.61	20.67	1.44
2.500	1.56	8.583	3.13	14.667	3.61	20.75	1.44
2.583	1.56	8.667	3.13	14.750	3.61	20.83	1.44
2.667	1.56	8.750	3.13	14.833	3.61	20.92	1.44
2.750	1.56	8.833	3.37	14.917	3.61	21.00	1.44
2.833	1.56	8.917	3.37	15.000	3.61	21.08	1.44
2.917	1.56	9.000	3.37	15.083	3.61	21.17	1.44
3.000	1.56	9.083	3.37	15.167	3.61	21.25	1.44
3.083	1.56	9.167	3.37	15.250	3.61	21.33	1.44
3.167	1.56	9.250	3.37	15.333	3.61	21.42	1.44
3.250	1.56	9.333	3.85	15.417	3.61	21.50	1.44
3.333	1.56	9.417	3.85	15.500	3.61	21.58	1.44
3.417	1.56	9.500	3.85	15.583	3.61	21.67	1.44
3.500	1.56	9.583	3.85	15.667	3.61	21.75	1.44
3.583	1.56	9.667	3.85	15.750	3.61	21.83	1.44
3.667	1.56	9.750	3.85	15.833	3.61	21.92	1.44
3.750	1.56	9.833	4.33	15.917	3.61	22.00	1.44
3.833	1.56	9.917	4.33	16.000	3.61	22.08	1.44
3.917	1.56	10.000	4.33	16.083	3.61	22.17	1.44
4.000	1.56	10.083	4.33	16.167	3.61	22.25	1.44
4.083	1.56	10.167	4.33	16.250	3.61	22.33	1.44
4.167	1.56	10.250	4.33	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.53	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.53	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.53	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.53	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.53	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.53	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.46	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.46	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.46	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.46	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.46	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.46	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.54	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.54	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.54	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.54	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.54	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.54	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.59	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.59	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.59	18.083	2.16	24.17	1.44
6.000	1.92	12.083	147.17	18.167	2.16	24.25	1.44
6.083	1.92	12.167	147.19	18.250	2.16		

Max. Eff. Inten. (mm/hr)= 147.19 194.12
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.29 (ii) 8.70 (ii)

Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.12	
			TOTALS
PEAK FLOW (cms)=	0.85	1.16	2.011 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	119.25	105.49	110.44
TOTAL RAINFALL (mm)=	120.25	120.25	120.25
RUNOFF COEFFICIENT =	0.99	0.88	0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901)|
| 1 + 2 = 3 |
-----
          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0101):  3.45  1.214  12.25  108.82
+ ID2= 2 ( 0102):  5.82  2.011  12.25  110.44
=====
ID = 3 ( 0901):  9.27  3.226  12.25  109.84

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

```
V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL
```

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-fac37fdee83\eea4f83c-831f-4a1b-9997-0fbf692c6e4a\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-fac37fdee83\eea4f83c-831f-4a1b-9997-0fbf692c6e4a\sc

DATE: 12/05/2025 TIME: 02:20:25

USER:

COMMENTS: _____

```
*****
** SIMULATION : 25 mm Chicago **
*****
```

```
-----
| READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
```

```
| 88e136fb-ff0d-4181-aa20-3aec27c99001\1faed9a1
| Ptotal= 24.97 mm | Comments: 25 mm Chicago
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	1.29	1.00	2.81	2.00	13.05	3.00	2.04
0.10	1.36	1.10	3.22	2.10	8.44	3.10	1.89
0.20	1.44	1.20	3.77	2.20	6.21	3.20	1.76
0.30	1.53	1.30	4.55	2.30	4.91	3.30	1.65
0.40	1.63	1.40	5.77	2.40	4.06	3.40	1.55
0.50	1.75	1.50	7.86	2.50	3.47	3.50	1.46
0.60	1.89	1.60	12.27	2.60	3.03	3.60	1.39
0.70	2.06	1.70	26.17	2.70	2.70	3.70	1.32
0.80	2.26	1.80	72.58	2.80	2.43	3.80	1.26
0.90	2.50	1.90	26.96	2.90	2.22	3.90	1.20

```
-----
| CALIB |
| STANDHYD ( 0101) | Area (ha)= 3.45
| ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Max. Eff. Inten. (mm/hr)= 63.46 27.90

over (min) 5.00 20.00
 Storage Coeff. (min)= 3.93 (ii) 15.70 (ii)
 Unit Hyd. Tpeak (min)= 5.00 20.00
 Unit Hyd. peak (cms)= 0.24 0.07

TOTALS
 PEAK FLOW (cms)= 0.26 0.07 0.281 (iii)
 TIME TO PEAK (hrs)= 1.92 2.17 1.92
 RUNOFF VOLUME (mm)= 23.97 11.13 17.29
 TOTAL RAINFALL (mm)= 24.97 24.97 24.97
 RUNOFF COEFFICIENT = 0.96 0.45 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | CALIB |
 | STANDHYD (0102) | Area (ha)= 5.82
 | ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Max.Eff.Inten.(mm/hr)= 63.46 46.11
 over (min) 5.00 15.00
 Storage Coeff. (min)= 4.60 (ii) 14.22 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.23 0.08

TOTALS
 PEAK FLOW (cms)= 0.31 0.20 0.414 (iii)
 TIME TO PEAK (hrs)= 1.92 2.08 1.92
 RUNOFF VOLUME (mm)= 23.97 14.01 17.59
 TOTAL RAINFALL (mm)= 24.97 24.97 24.97
 RUNOFF COEFFICIENT = 0.96 0.56 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | ADD HYD (0901) |
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0101): 3.45 0.281 1.92 17.29
 + ID2= 2 (0102): 5.82 0.414 1.92 17.59

 ID = 3 (0901): 9.27 0.694 1.92 17.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 =====
 V V I SSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 W V I SSSS UUUU A A LLLL
 000 TTTT TTTT H H Y Y M M 000 TM
 O O T T H H Y Y M M O O
 O O T T H H Y M M O O
 000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voim.dat

Output filename:
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 2c005-c206-46d5-a269-5643452395e8\sc

DATE: 12/05/2025

TIME: 02:20:25

USER:

COMMENTS: _____

 ** SIMULATION : 2yr 4hr 10min Chicago **

CHICAGO STORM
 Ptotal= 31.26 mm

IDF curve parameters: A= 360.408
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.63	1.00	12.44	2.00	5.20	3.00	3.03
0.17	2.94	1.17	72.08	2.17	4.59	3.17	2.85
0.33	3.35	1.33	15.26	2.33	4.13	3.33	2.70
0.50	3.95	1.50	9.62	2.50	3.77	3.50	2.56
0.67	4.89	1.67	7.34	2.67	3.48	3.67	2.44
0.83	6.69	1.83	6.05	2.83	3.23	3.83	2.34

CALIB	Area (ha)=	3.45
STANDHYD (0101)	Total Imp(%)=	57.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.63	1.083	12.44	2.083	5.20	3.08	3.03
0.167	2.63	1.167	12.44	2.167	5.20	3.17	3.03
0.250	2.94	1.250	72.08	2.250	4.59	3.25	2.85
0.333	2.94	1.333	72.08	2.333	4.59	3.33	2.85
0.417	3.35	1.417	15.26	2.417	4.13	3.42	2.70
0.500	3.35	1.500	15.26	2.500	4.13	3.50	2.70
0.583	3.95	1.583	9.62	2.583	3.77	3.58	2.56
0.667	3.95	1.667	9.62	2.667	3.77	3.67	2.56
0.750	4.89	1.750	7.34	2.750	3.48	3.75	2.44
0.833	4.89	1.833	7.34	2.833	3.48	3.83	2.44
0.917	6.69	1.917	6.05	2.917	3.23	3.92	2.34
1.000	6.69	2.000	6.05	3.000	3.23	4.00	2.34

Max. Eff. Inten. (mm/hr)= 72.08 42.71
 over (min) = 5.00 15.00
 Storage Coeff. (min)= 3.74 (ii) 13.66 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.25 0.08

TOTALS

PEAK FLOW (cms)= 0.31 0.09 0.356 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 30.26 16.09 22.89
 TOTAL RAINFALL (mm)= 31.26 31.26 31.26
 RUNOFF COEFFICIENT = 0.97 0.51 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.

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

```
-----
| CALIB |
| STANDHYD ( 0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00
-----
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

```
-----
      ---- TRANSFORMED HYETOGRAPH ----
      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.63 | 1.083 12.44 | 2.083 5.20 | 3.08 3.03
0.167 2.63 | 1.167 12.44 | 2.167 5.20 | 3.17 3.03
0.250 2.94 | 1.250 72.08 | 2.250 4.59 | 3.25 2.85
0.333 2.94 | 1.333 72.08 | 2.333 4.59 | 3.33 2.85
0.417 3.35 | 1.417 15.26 | 2.417 4.13 | 3.42 2.70
0.500 3.35 | 1.500 15.26 | 2.500 4.13 | 3.50 2.70
0.583 3.95 | 1.583 9.62 | 2.583 3.77 | 3.58 2.56
0.667 3.95 | 1.667 9.62 | 2.667 3.77 | 3.67 2.56
0.750 4.89 | 1.750 7.34 | 2.750 3.48 | 3.75 2.44
0.833 4.89 | 1.833 7.34 | 2.833 3.48 | 3.83 2.44
0.917 6.69 | 1.917 6.05 | 2.917 3.23 | 3.92 2.34
1.000 6.69 | 2.000 6.05 | 3.000 3.23 | 4.00 2.34
-----
```

Max.Eff.Inten.(mm/hr)=	72.08	62.10
over (min)	5.00	15.00
Storage Coeff. (min)=	4.37 (ii)	12.91 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.23	0.08
TOTALS		
PEAK FLOW (cms)=	0.38	0.24
TIME TO PEAK (hrs)=	1.33	1.50
RUNOFF VOLUME (mm)=	30.26	19.52
TOTAL RAINFALL (mm)=	31.26	31.26
RUNOFF COEFFICIENT =	0.97	0.62

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

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

```
-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
-----
ID1= 1 ( 0101): 3.45 0.356 1.33 22.89
+ ID2= 2 ( 0102): 5.82 0.511 1.33 23.38
-----
ID = 3 ( 0901): 9.27 0.867 1.33 23.20
-----
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL
000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
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Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\3985383e-e46e-4091-baee-193880112db1\sc

DATE: 12/05/2025

TIME: 02:20:25

USER:

COMMENTS: _____

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.51	1.083	16.60	2.083	6.94	3.08	4.04
0.167	3.51	1.167	16.60	2.167	6.94	3.17	4.04
0.250	3.92	1.250	96.22	2.250	6.13	3.25	3.81
0.333	3.92	1.333	96.22	2.333	6.13	3.33	3.81
0.417	4.47	1.417	20.37	2.417	5.51	3.42	3.60
0.500	4.47	1.500	20.37	2.500	5.51	3.50	3.60
0.583	5.27	1.583	12.85	2.583	5.03	3.58	3.42
0.667	5.27	1.667	12.85	2.667	5.03	3.67	3.42
0.750	6.53	1.750	9.80	2.750	4.64	3.75	3.26
0.833	6.53	1.833	9.80	2.833	4.64	3.83	3.26
0.917	8.93	1.917	8.07	2.917	4.32	3.92	3.12
1.000	8.93	2.000	8.07	3.000	4.32	4.00	3.12

 ** SIMULATION : 5yr 4hr 10min Chicago **

CHICAGO STORM
 Ptotal= 41.72 mm

IDF curve parameters: A= 481.128
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.51	1.00	16.60	2.00	6.94	3.00	4.04
0.17	3.92	1.17	96.22	2.17	6.13	3.17	3.81
0.33	4.47	1.33	20.37	2.33	5.51	3.33	3.60
0.50	5.27	1.50	12.85	2.50	5.03	3.50	3.42
0.67	6.53	1.67	9.80	2.67	4.64	3.67	3.26
0.83	8.93	1.83	8.07	2.83	4.32	3.83	3.12

Max.Eff.Inten.(mm/hr)= 96.22 69.46
 over (min) = 5.00 15.00
 Storage Coeff. (min)= 3.33 (ii) 11.50 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.26 0.09

TOTALS

PEAK FLOW (cms)= 0.42 0.15 0.506 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 40.72 24.96 32.53
 TOTAL RAINFALL (mm)= 41.72 41.72 41.72
 RUNOFF COEFFICIENT = 0.98 0.60 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
 STANDHYD (0101)
 ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

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

Area (ha)= 5.82
 Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.51	1.083	16.60	2.083	6.94	3.08	4.04
0.167	3.51	1.167	16.60	2.167	6.94	3.17	4.04
0.250	3.92	1.250	96.22	2.250	6.13	3.25	3.81
0.333	3.92	1.333	96.22	2.333	6.13	3.33	3.81
0.417	4.47	1.417	20.37	2.417	5.51	3.42	3.60
0.500	4.47	1.500	20.37	2.500	5.51	3.50	3.60
0.583	5.27	1.583	12.85	2.583	5.03	3.58	3.42
0.667	5.27	1.667	12.85	2.667	5.03	3.67	3.42
0.750	6.53	1.750	9.80	2.750	4.64	3.75	3.26
0.833	6.53	1.833	9.80	2.833	4.64	3.83	3.26
0.917	8.93	1.917	8.07	2.917	4.32	3.92	3.12
1.000	8.93	2.000	8.07	3.000	4.32	4.00	3.12

Max.Eff.Inten.(mm/hr)= 96.22 95.29
over (min) 5.00 15.00
Storage Coeff. (min)= 3.90 (ii) 11.09 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.09

TOTALS

PEAK FLOW (cms)= 0.52 0.39 0.747 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 40.72 29.11 33.29
TOTAL RAINFALL (mm)= 41.72 41.72 41.72
RUNOFF COEFFICIENT = 0.98 0.70 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.45	0.506	1.33	32.53
+ ID2= 2 (0102):	5.82	0.747	1.33	33.29
=====				
ID = 3 (0901):	9.27	1.254	1.33	33.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLLL

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

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

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Output filename:
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DATE: 12/05/2025

TIME: 02:20:25

USER:

COMMENTS: _____

** SIMULATION : 10yr 4hr 10min Chicago **

CHICAGO STORM	IDF curve parameters: A= 559.858
Ptotal= 48.55 mm	B= 0.000
	C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.08	1.00	19.32	2.00	8.07	3.00	4.70
0.17	4.56	1.17	111.96	2.17	7.13	3.17	4.43
0.33	5.21	1.33	23.71	2.33	6.42	3.33	4.19
0.50	6.13	1.50	14.95	2.50	5.85	3.50	3.98
0.67	7.59	1.67	11.40	2.67	5.40	3.67	3.80
0.83	10.39	1.83	9.39	2.83	5.02	3.83	3.63

Storage Coeff. (min)= 3.13 (ii) 10.57 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.27 0.09

PEAK FLOW (cms)= 0.50 0.20 0.609 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 47.55 31.02 38.95
 TOTAL RAINFALL (mm)= 48.55 48.55 48.55
 RUNOFF COEFFICIENT = 0.98 0.64 0.80

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
 STANDHYD (0101)
 ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.08	1.083	19.32	2.083	8.07	3.08	4.70
0.167	4.08	1.167	19.32	2.167	8.07	3.17	4.70
0.250	4.56	1.250	111.96	2.250	7.13	3.25	4.43
0.333	4.56	1.333	111.96	2.333	7.13	3.33	4.43
0.417	5.21	1.417	23.71	2.417	6.42	3.42	4.19
0.500	5.21	1.500	23.71	2.500	6.42	3.50	4.19
0.583	6.13	1.583	14.95	2.583	5.85	3.58	3.98
0.667	6.13	1.667	14.95	2.667	5.85	3.67	3.98
0.750	7.59	1.750	11.40	2.750	5.40	3.75	3.80
0.833	7.59	1.833	11.40	2.833	5.40	3.83	3.80
0.917	10.39	1.917	9.39	2.917	5.02	3.92	3.63
1.000	10.39	2.000	9.39	3.000	5.02	4.00	3.63

Max. Eff. Inten. (mm/hr)= 111.96 87.90
 over (min) 5.00 15.00

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

Area (ha)= 5.82
 Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.08	1.083	19.32	2.083	8.07	3.08	4.70
0.167	4.08	1.167	19.32	2.167	8.07	3.17	4.70
0.250	4.56	1.250	111.96	2.250	7.13	3.25	4.43
0.333	4.56	1.333	111.96	2.333	7.13	3.33	4.43
0.417	5.21	1.417	23.71	2.417	6.42	3.42	4.19
0.500	5.21	1.500	23.71	2.500	6.42	3.50	4.19
0.583	6.13	1.583	14.95	2.583	5.85	3.58	3.98
0.667	6.13	1.667	14.95	2.667	5.85	3.67	3.98
0.750	7.59	1.750	11.40	2.750	5.40	3.75	3.80
0.833	7.59	1.833	11.40	2.833	5.40	3.83	3.80
0.917	10.39	1.917	9.39	2.917	5.02	3.92	3.63
1.000	10.39	2.000	9.39	3.000	5.02	4.00	3.63

Max.Eff.Inten.(mm/hr)= 111.96 117.44
 over (min) 5.00 15.00
 Storage Coeff. (min)= 3.67 (ii) 10.29 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.25 0.09

TOTALS
 PEAK FLOW (cms)= 0.62 0.49 0.908 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 47.55 35.53 39.86
 TOTAL RAINFALL (mm)= 48.55 48.55 48.55
 RUNOFF COEFFICIENT = 0.98 0.73 0.82

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\24
 f7f71-b4dd-4d7d-b8cc-41a3299d317a\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\24
 f7f71-b4dd-4d7d-b8cc-41a3299d317a\sc

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

DATE: 12/05/2025 TIME: 02:20:25

USER:

COMMENTS: _____

ADD HYD (0901)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.45	0.609	1.33	38.95
+ ID2= 2 (0102):	5.82	0.908	1.33	39.86
=====				
ID = 3 (0901):	9.27	1.517	1.33	39.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CHICAGO STORM | IDF curve parameters: A= 659.582
 | Ptotal= 57.20 mm | B= 0.000
 C= 0.699
 used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.81	1.00	22.76	2.00	9.51	3.00	5.54
0.17	5.37	1.17	131.91	2.17	8.40	3.17	5.22
0.33	6.13	1.33	27.93	2.33	7.56	3.33	4.94
0.50	7.22	1.50	17.61	2.50	6.90	3.50	4.69
0.67	8.95	1.67	13.43	2.67	6.36	3.67	4.47
0.83	12.24	1.83	11.06	2.83	5.92	3.83	4.28

V V I SSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 W I SSSS UUUU A A LLLL
 000 TTTT TTTT H H Y Y M M 000 TM
 0 0 T T H H Y Y M M 0 0
 0 0 T T H H Y Y M M 0 0
 000 T T H H Y Y M M 000

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```

-----
| CALIB |
| STANDHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 3.45
Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

```

```

          IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 1.97 1.48
Dep. Storage (mm)= 1.00 3.67
Average Slope (%)= 1.00 2.00
Length (m)= 151.66 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.81 | 1.083 22.76 | 2.083 9.51 | 3.08 5.54
0.167 4.81 | 1.167 22.76 | 2.167 9.51 | 3.17 5.54
0.250 5.37 | 1.250 131.91 | 2.250 8.40 | 3.25 5.22
0.333 5.37 | 1.333 131.91 | 2.333 8.40 | 3.33 5.22
0.417 6.13 | 1.417 27.93 | 2.417 7.56 | 3.42 4.94
0.500 6.13 | 1.500 27.93 | 2.500 7.56 | 3.50 4.94
0.583 7.22 | 1.583 17.61 | 2.583 6.90 | 3.58 4.69
0.667 7.22 | 1.667 17.61 | 2.667 6.90 | 3.67 4.69
0.750 8.95 | 1.750 13.43 | 2.750 6.36 | 3.75 4.47
0.833 8.95 | 1.833 13.43 | 2.833 6.36 | 3.83 4.47
0.917 12.24 | 1.917 11.06 | 2.917 5.92 | 3.92 4.28
1.000 12.24 | 2.000 11.06 | 3.000 5.92 | 4.00 4.28

```

```

Max.Eff.Inten.(mm/hr)= 131.91 111.93
over (min) 5.00 10.00
Storage Coeff. (min)= 2.94 (ii) 9.68 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.11

```

```

*TOTALS*
0.830 (iii)
1.33
47.20
57.20
0.83

```

```

PEAK FLOW (cms)= 0.59 0.28
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 56.20 38.89
TOTAL RAINFALL (mm)= 57.20 57.20
RUNOFF COEFFICIENT = 0.98 0.68

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0102) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 5.82
Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

```

```

          IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 3.08 2.74
Dep. Storage (mm)= 1.00 3.25
Average Slope (%)= 1.00 2.00
Length (m)= 196.98 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.81 | 1.083 22.76 | 2.083 9.51 | 3.08 5.54
0.167 4.81 | 1.167 22.76 | 2.167 9.51 | 3.17 5.54
0.250 5.37 | 1.250 131.91 | 2.250 8.40 | 3.25 5.22
0.333 5.37 | 1.333 131.91 | 2.333 8.40 | 3.33 5.22
0.417 6.13 | 1.417 27.93 | 2.417 7.56 | 3.42 4.94
0.500 6.13 | 1.500 27.93 | 2.500 7.56 | 3.50 4.94
0.583 7.22 | 1.583 17.61 | 2.583 6.90 | 3.58 4.69
0.667 7.22 | 1.667 17.61 | 2.667 6.90 | 3.67 4.69
0.750 8.95 | 1.750 13.43 | 2.750 6.36 | 3.75 4.47
0.833 8.95 | 1.833 13.43 | 2.833 6.36 | 3.83 4.47
0.917 12.24 | 1.917 11.06 | 2.917 5.92 | 3.92 4.28
1.000 12.24 | 2.000 11.06 | 3.000 5.92 | 4.00 4.28

```

```

Max.Eff.Inten.(mm/hr)= 131.91 145.74
over (min) 5.00 10.00
Storage Coeff. (min)= 3.43 (ii) 9.51 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.12

```

```

*TOTALS*
0.73 0.68 1.332 (iii)
1.33
43.77 48.25
57.20 57.20
0.98 0.77 0.84

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-----
| ADD HYD ( 0901)|
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0101):  3.45  0.830  1.33  47.20
+ ID2= 2 ( 0102):  5.82  1.332  1.33  48.25
=====
ID = 3 ( 0901):  9.27  2.163  1.33  47.86
-----
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
=====
V  V  I  SSSSS  U  U  A  L          (v 6.2.2019)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
W  I  SSSSS  UUUUU  A  A  LLLLL
```

```
000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000
```

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

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

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0BF8B14-D4AA-429F-ADE8-FACF37FDEE83\B0A
 F6B55-9543-4146-9FAB-5BCBB9E98265\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0BF8B14-D4AA-429F-ADE8-FACF37FDEE83\B0A
 F6B55-9543-4146-9FAB-5BCBB9E98265\sc

DATE: 12/05/2025 TIME: 02:20:25

USER:

COMMENTS: _____

```
-----
*****
** SIMULATION : 50yr 4hr 10min Chicago **
*****
```

```
-----
| CHICAGO STORM |
| Ptotal= 63.73 mm |
-----
```

IDF curve parameters: A= 734.813
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.36	1.00	25.36	2.00	10.59	3.00	6.17
0.17	5.99	1.17	146.95	2.17	9.36	3.17	5.81
0.33	6.83	1.33	31.12	2.33	8.42	3.33	5.50
0.50	8.04	1.50	19.62	2.50	7.68	3.50	5.23
0.67	9.97	1.67	14.96	2.67	7.09	3.67	4.98
0.83	13.63	1.83	12.33	2.83	6.59	3.83	4.76

```
-----
| CALIB |
| STANDHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----
```

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

```
-----
---- TRANSFORMED HYETOGRAPH ----
TIME  RAIN | TIME  RAIN | TIME  RAIN | TIME  RAIN
```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.36	1.083	25.36	2.083	10.59	3.08	6.17
0.167	5.36	1.167	25.36	2.167	10.59	3.17	6.17
0.250	5.99	1.250	146.95	2.250	9.36	3.25	5.81
0.333	5.99	1.333	146.95	2.333	9.36	3.33	5.81
0.417	6.83	1.417	31.12	2.417	8.42	3.42	5.50
0.500	6.83	1.500	31.12	2.500	8.42	3.50	5.50
0.583	8.04	1.583	19.62	2.583	7.68	3.58	5.23
0.667	8.04	1.667	19.62	2.667	7.68	3.67	5.23
0.750	9.97	1.750	14.96	2.750	7.09	3.75	4.98
0.833	9.97	1.833	14.96	2.833	7.09	3.83	4.98
0.917	13.63	1.917	12.33	2.917	6.59	3.92	4.76
1.000	13.63	2.000	12.33	3.000	6.59	4.00	4.76

Max.Eff.Inten.(mm/hr)= 146.95 130.39
over (min) 5.00 10.00
Storage Coeff. (min)= 2.81 (ii) 9.16 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.12

TOTALS
PEAK FLOW (cms)= 0.66 0.34 0.951 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 62.72 44.93 53.47
TOTAL RAINFALL (mm)= 63.73 63.73 63.73
RUNOFF COEFFICIENT = 0.98 0.71 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0102) | Area (ha)= 5.82
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.36	1.083	25.36	2.083	10.59	3.08	6.17
0.167	5.36	1.167	25.36	2.167	10.59	3.17	6.17
0.250	5.99	1.250	146.95	2.250	9.36	3.25	5.81
0.333	5.99	1.333	146.95	2.333	9.36	3.33	5.81
0.417	6.83	1.417	31.12	2.417	8.42	3.42	5.50
0.500	6.83	1.500	31.12	2.500	8.42	3.50	5.50
0.583	8.04	1.583	19.62	2.583	7.68	3.58	5.23
0.667	8.04	1.667	19.62	2.667	7.68	3.67	5.23
0.750	9.97	1.750	14.96	2.750	7.09	3.75	4.98
0.833	9.97	1.833	14.96	2.833	7.09	3.83	4.98
0.917	13.63	1.917	12.33	2.917	6.59	3.92	4.76
1.000	13.63	2.000	12.33	3.000	6.59	4.00	4.76

Max.Eff.Inten.(mm/hr)= 146.95 167.18
over (min) 5.00 10.00
Storage Coeff. (min)= 3.29 (ii) 9.04 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.12

TOTALS
PEAK FLOW (cms)= 0.82 0.80 1.533 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 62.73 50.06 54.62
TOTAL RAINFALL (mm)= 63.73 63.73 63.73
RUNOFF COEFFICIENT = 0.98 0.79 0.86

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0901) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm) |
ID1= 1 (0101): 3.45 0.951 1.33 53.47
+ ID2= 2 (0102): 5.82 1.533 1.33 54.62
===== ID = 3 (0901): 9.27 2.484 1.33 54.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLLL

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

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Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity (mm/hr) at various time intervals (hrs).

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voim.dat

Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\fbf8b14-d4aa-429f-ade8-facf37fdee83\648
3f6e8-390d-4f76-ae54-2982be423958\sc
Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\fbf8b14-d4aa-429f-ade8-facf37fdee83\648
3f6e8-390d-4f76-ae54-2982be423958\sc

CALIB
STANDHYD (0101) Area (ha)= 3.45
ID= 1 DT= 5.0 min Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

Table with 3 columns: IMPERVIOUS, PERVIOUS (i). Rows include Surface Area (ha), Dep. Storage (mm), Average Slope (%), Length (m), and Mannings n.

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

DATE: 12/05/2025

TIME: 02:20:25

USER:

COMMENTS: _____

---- TRANSFORMED HYETOGRAPH ----

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed rainfall intensity (mm/hr) at various time intervals (hrs).

** SIMULATION : 100yr 4hr 10min Chicago **

CHICAGO STORM
Ptotal= 70.10 mm

IDF curve parameters: A= 808.295
B= 0.000
C= 0.699

used in: INTENSITY = A / (t + B)^C

Max. Eff. Inten. (mm/hr)= 161.65 148.61
over (min) 5.00 10.00
Storage Coeff. (min)= 2.71 (ii) 8.73 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.29 0.12

PEAK FLOW (cms)= 0.73 0.39
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 69.10 50.91
 TOTAL RAINFALL (mm)= 70.10 70.10
 RUNOFF COEFFICIENT = 0.99 0.73

TOTALS
 1.072 (iii)
 1.33
 59.64
 70.10
 0.85

over (min) 5.00 10.00
 Storage Coeff. (min)= 3.17 (ii) 8.65 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.27 0.12

PEAK FLOW (cms)= 0.91 0.91
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 69.10 56.23
 TOTAL RAINFALL (mm)= 70.10 70.10
 RUNOFF COEFFICIENT = 0.99 0.80

TOTALS
 1.732 (iii)
 1.33
 60.86
 70.10
 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | CALIB |
 | STANDHYD (0102) | Area (ha)= 5.82
 | ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.08	2.74
Dep. Storage	(mm)=	1.00	3.25
Average Slope	(%)=	1.00	2.00
Length	(m)=	196.98	40.00
Mannings n	=	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.89	1.083	27.89	2.083	11.65	3.08	6.79
0.167	5.89	1.167	27.89	2.167	11.65	3.17	6.79
0.250	6.59	1.250	161.65	2.250	10.29	3.25	6.39
0.333	6.59	1.333	161.65	2.333	10.29	3.33	6.39
0.417	7.52	1.417	34.23	2.417	9.26	3.42	6.05
0.500	7.52	1.500	34.23	2.500	9.26	3.50	6.05
0.583	8.85	1.583	21.58	2.583	8.45	3.58	5.75
0.667	8.85	1.667	21.58	2.667	8.45	3.67	5.75
0.750	10.96	1.750	16.46	2.750	7.80	3.75	5.48
0.833	10.96	1.833	16.46	2.833	7.80	3.83	5.48
0.917	15.00	1.917	13.56	2.917	7.25	3.92	5.24
1.000	15.00	2.000	13.56	3.000	7.25	4.00	5.24

Max. Eff. Inten. (mm/hr)= 161.65 188.14

 | ADD HYD (0901) |
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 ID1= 1 (0101): 3.45 1.072 1.33 59.64
 + ID2= 2 (0102): 5.82 1.732 1.33 60.86
 =====
 ID = 3 (0901): 9.27 2.803 1.33 60.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 V V I SSSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U AAAAA L
 V V I SS U U A A L
 VV I SSSSS UUUUU A A LLLLL
 000 TTTTT TTTT H H Y Y M M 000 TM
 O O T T H H Y Y MM MM O O
 O O T T H H Y M M O O
 000 T T H H Y M M 000
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
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Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-facf37fdee83\1737b61f-7902-42e6-9b24-f4735f932e55\sc

DATE: 12/05/2025

TIME: 02:20:25

USER:

COMMENTS: _____

 ** SIMULATION : TIMMINS **

 READ STORM
 Ptotal=193.00 mm

 Filename: C:\Users\kbelanger\AppData\Local\Temp\88e136fb-ff0d-4181-aa20-3aec27c99001\4cc50b52
 Comments: TIMMINS

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	15.00	3.00	3.00	6.00	43.00	9.00	13.00
0.25	15.00	3.25	3.00	6.25	43.00	9.25	13.00
0.50	15.00	3.50	3.00	6.50	43.00	9.50	13.00
0.75	15.00	3.75	3.00	6.75	43.00	9.75	13.00
1.00	20.00	4.00	5.00	7.00	20.00	10.00	13.00
1.25	20.00	4.25	5.00	7.25	20.00	10.25	13.00
1.50	20.00	4.50	5.00	7.50	20.00	10.50	13.00
1.75	20.00	4.75	5.00	7.75	20.00	10.75	13.00
2.00	10.00	5.00	20.00	8.00	23.00	11.00	8.00
2.25	10.00	5.25	20.00	8.25	23.00	11.25	8.00
2.50	10.00	5.50	20.00	8.50	23.00	11.50	8.00
2.75	10.00	5.75	20.00	8.75	23.00	11.75	8.00

 CALIB
 STANDHYD (0101) | Area (ha)= 3.45
 ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 48.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.67
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00

2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max. Eff. Inten. (mm/hr)= 43.00 50.62
over (min) 5.00 15.00
Storage Coeff. (min)= 4.60 (ii) 13.86 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.23 0.08

TOTALS
PEAK FLOW (cms)= 0.20 0.21 0.403 (iii)
TIME TO PEAK (hrs)= 6.92 7.00 7.00
RUNOFF VOLUME (mm)= 192.00 170.83 180.99
TOTAL RAINFALL (mm)= 193.00 193.00 193.00
RUNOFF COEFFICIENT = 0.99 0.89 0.94

0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 90.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0102)
ID= 1 DT= 5.0 min
Area (ha)= 5.82
Total Imp(%)= 53.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	2.74
Dep. Storage (mm)=	1.00	3.25
Average Slope (%)=	1.00	2.00
Length (m)=	196.98	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00

Max. Eff. Inten. (mm/hr)= 43.00 57.82
over (min) 5.00 15.00
Storage Coeff. (min)= 5.38 (ii) 14.16 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.21 0.08

TOTALS
PEAK FLOW (cms)= 0.25 0.43 0.683 (iii)
TIME TO PEAK (hrs)= 6.92 7.00 7.00
RUNOFF VOLUME (mm)= 192.00 177.72 182.86
TOTAL RAINFALL (mm)= 193.00 193.00 193.00
RUNOFF COEFFICIENT = 0.99 0.92 0.95

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 93.1 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

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

ADD HYD (0901)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.45	0.403	7.00	180.99
+ ID2= 2 (0102):	5.82	0.683	7.00	182.86
=====				
ID = 3 (0901):	9.27	1.086	7.00	182.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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Appendix C: Proposed Conditions

Project Details

Discovery Center Relocation	125001-01
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Prepared By

KB	Nov./25
----	---------

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed	GSCA
Catchment ID	A7A
Catchment Area (ha)	3.45
Impervious %	57%
Pervious Area (ha)	1.48

Average Curve Number (CN) & Initial Abstraction (IA) for Pervious Area

Soil Symbol	Duc			
Soil Series	Dunedin			
Hydrologic Soils Group	D			
Soil Texture	Clay Loam or Clay			
Runoff Coefficient Type	3			
Area (ha)	1.48			
Percentage of Catchment	100%			

Land Cover Category	IA	A (ha)	CN	A (ha)	CN	A (ha)	CN	A (ha)	CN
Impervious	2	0.79	100						
Gravel	3		89						
Woodland	10		79						
Pasture/Lawns	5	0.69	84						
Meadows	8		81						
Cultivated	7		86						
Waterbody	12		50						
Average CN			92.32						
Average IA			3.39						

Summary

Catchment CN:	92.3
---------------	------

Catchment IA (mm):	3.39
--------------------	------

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Project Details

Discovery Center Relocation	125001-01
-----------------------------	-----------

Prepared By

KB	Nov./25
----	---------

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed	GSCA
Catchment ID	A7B
Catchment Area (ha)	5.39
Impervious %	53%
Pervious Area (ha)	2.53

Average Curve Number (CN) & Initial Abstraction (IA) for Pervious Area

Soil Symbol	Duc			
Soil Series	Dunedin			
Hydrologic Soils Group	D			
Soil Texture	Clay Loam or Clay			
Runoff Coefficient Type	3			
Area (ha)	2.53			
Percentage of Catchment	100%			

Land Cover Category	IA	A (ha)	CN	A (ha)	CN	A (ha)	CN	A (ha)	CN
Impervious	2	0.54	100						
Gravel	3	0.73	89						
Woodland	10		79						
Pasture/Lawns	5	1.07	84						
Meadows	8		81						
Cultivated	7		86						
Waterbody	12		50						
Average CN			82.44						
Average IA			3.40						

Summary

Catchment CN:	82.4
---------------	------

Catchment IA (mm):	3.40
--------------------	------

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Project Details

Discovery Center Relocation	125001-01
-----------------------------	-----------

Prepared By

KB	Nov./25
----	---------

Data Sources

Detailed Soil Survey Reports for Ontario, GSCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (2010), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed	GSCA
Catchment ID	A7C
Catchment Area (ha)	0.43
Impervious %	50%
Pervious Area (ha)	0.22

Average Curve Number (CN) & Initial Abstraction (IA) for Pervious Area

Soil Symbol	Duc			
Soil Series	Dunedin			
Hydrologic Soils Group	D			
Soil Texture	Clay Loam or Clay			
Runoff Coefficient Type	3			
Area (ha)	0.22			
Percentage of Catchment	100%			

Land Cover Category	IA	A (ha)	CN	A (ha)	CN	A (ha)	CN	A (ha)	CN
Impervious	2		100						
Gravel	3		89						
Woodland	10		79						
Pasture/Lawns	5	0.22	84						
Meadows	8		81						
Cultivated	7		86						
Waterbody	12		50						
Average CN			85.95						
Average IA			5.12						

Summary

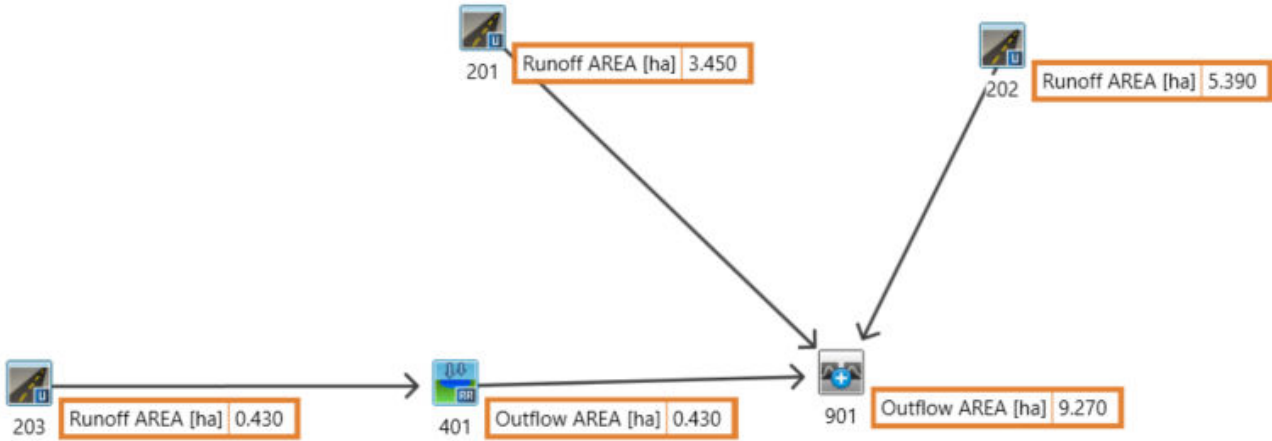
Catchment CN:	86.0
---------------	------

Catchment IA (mm):	5.12
--------------------	------

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

PROJECT	Existing Discovery Center The Town of The Blue Mountains	FILE	125001
		DATE	11/1/2025
SUBJECT	Visual OTTHYMO Schematic Post Development	NAME	K Belanger
		PAGE	1 OF 1



NASHYD



ROUTE PIPE



DUHYD



STANDHYD



ROUTE CHANNEL



DIVERT HYD



ADDHYD



ROUTE RESERVOIR

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V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL
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000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y M M O O
000 T T H H Y M M 000
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***** D E T A I L E D O U T P U T *****

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DATE: 12/05/2025

TIME: 02:32:42

USER:

COMMENTS: _____

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*****
** SIMULATION : Run 01 **
*****
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```
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| READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
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```
| 96eca046-ece6-4e0a-883e-8ece97edf8d5\bc43cc68
| Ptotal= 53.62 mm | Comments: 2yr 24hr 15min SCS Type II
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	0.97	12.50	7.72	18.75	0.97
0.25	0.59	6.50	0.97	12.75	3.97	19.00	0.97
0.50	0.59	6.75	0.97	13.00	3.97	19.25	0.97
0.75	0.59	7.00	0.97	13.25	2.90	19.50	0.97
1.00	0.59	7.25	1.18	13.50	2.90	19.75	0.97
1.25	0.59	7.50	1.18	13.75	2.25	20.00	0.97
1.50	0.59	7.75	1.18	14.00	2.25	20.25	0.64
1.75	0.59	8.00	1.18	14.25	1.61	20.50	0.64
2.00	0.59	8.25	1.39	14.50	1.61	20.75	0.64
2.25	0.70	8.50	1.39	14.75	1.61	21.00	0.64
2.50	0.70	8.75	1.50	15.00	1.61	21.25	0.64
2.75	0.70	9.00	1.50	15.25	1.61	21.50	0.64
3.00	0.70	9.25	1.72	15.50	1.61	21.75	0.64
3.25	0.70	9.50	1.72	15.75	1.61	22.00	0.64
3.50	0.70	9.75	1.93	16.00	1.61	22.25	0.64
3.75	0.70	10.00	1.93	16.25	0.97	22.50	0.64
4.00	0.70	10.25	2.47	16.50	0.97	22.75	0.64
4.25	0.86	10.50	2.47	16.75	0.97	23.00	0.64
4.50	0.86	10.75	3.32	17.00	0.97	23.25	0.64
4.75	0.86	11.00	3.32	17.25	0.97	23.50	0.64
5.00	0.86	11.25	5.15	17.50	0.97	23.75	0.64
5.25	0.86	11.50	5.15	17.75	0.97	24.00	0.64
5.50	0.86	11.75	15.87	18.00	0.97		
5.75	0.86	12.00	65.63	18.25	0.97		
6.00	0.86	12.25	7.72	18.50	0.97		

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| CALIB |
| STANDHYD ( 0203) | Area (ha)= 0.43
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 0.22	0.22
Dep. Storage	(mm)= 1.00	5.12
Average Slope	(%)= 1.00	2.00
Length	(m)= 53.54	40.00
Mannings n	= 0.013	0.250

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.86	12.250	65.63	18.33	0.97
0.167	0.00	6.250	0.86	12.333	7.73	18.42	0.97
0.250	0.00	6.333	0.97	12.417	7.72	18.50	0.97
0.333	0.59	6.417	0.97	12.500	7.72	18.58	0.97
0.417	0.59	6.500	0.97	12.583	7.72	18.67	0.97
0.500	0.59	6.583	0.97	12.667	7.72	18.75	0.97
0.583	0.59	6.667	0.97	12.750	7.72	18.83	0.97
0.667	0.59	6.750	0.97	12.833	3.97	18.92	0.97
0.750	0.59	6.833	0.97	12.917	3.97	19.00	0.97
0.833	0.59	6.917	0.97	13.000	3.97	19.08	0.97
0.917	0.59	7.000	0.97	13.083	3.97	19.17	0.97
1.000	0.59	7.083	0.97	13.167	3.97	19.25	0.97
1.083	0.59	7.167	0.97	13.250	3.97	19.33	0.97
1.167	0.59	7.250	0.97	13.333	2.90	19.42	0.97
1.250	0.59	7.333	1.18	13.417	2.90	19.50	0.97
1.333	0.59	7.417	1.18	13.500	2.90	19.58	0.97
1.417	0.59	7.500	1.18	13.583	2.90	19.67	0.97
1.500	0.59	7.583	1.18	13.667	2.90	19.75	0.97
1.583	0.59	7.667	1.18	13.750	2.90	19.83	0.97
1.667	0.59	7.750	1.18	13.833	2.25	19.92	0.97
1.750	0.59	7.833	1.18	13.917	2.25	20.00	0.97
1.833	0.59	7.917	1.18	14.000	2.25	20.08	0.97
1.917	0.59	8.000	1.18	14.083	2.25	20.17	0.97
2.000	0.59	8.083	1.18	14.167	2.25	20.25	0.97
2.083	0.59	8.167	1.18	14.250	2.25	20.33	0.64
2.167	0.59	8.250	1.18	14.333	1.61	20.42	0.64
2.250	0.59	8.333	1.39	14.417	1.61	20.50	0.64
2.333	0.70	8.417	1.39	14.500	1.61	20.58	0.64
2.417	0.70	8.500	1.39	14.583	1.61	20.67	0.64
2.500	0.70	8.583	1.39	14.667	1.61	20.75	0.64
2.583	0.70	8.667	1.39	14.750	1.61	20.83	0.64
2.667	0.70	8.750	1.39	14.833	1.61	20.92	0.64
2.750	0.70	8.833	1.50	14.917	1.61	21.00	0.64
2.833	0.70	8.917	1.50	15.000	1.61	21.08	0.64
2.917	0.70	9.000	1.50	15.083	1.61	21.17	0.64
3.000	0.70	9.083	1.50	15.167	1.61	21.25	0.64
3.083	0.70	9.167	1.50	15.250	1.61	21.33	0.64
3.167	0.70	9.250	1.50	15.333	1.61	21.42	0.64
3.250	0.70	9.333	1.72	15.417	1.61	21.50	0.64
3.333	0.70	9.417	1.72	15.500	1.61	21.58	0.64
3.417	0.70	9.500	1.72	15.583	1.61	21.67	0.64
3.500	0.70	9.583	1.72	15.667	1.61	21.75	0.64
3.583	0.70	9.667	1.72	15.750	1.61	21.83	0.64
3.667	0.70	9.750	1.72	15.833	1.61	21.92	0.64
3.750	0.70	9.833	1.93	15.917	1.61	22.00	0.64
3.833	0.70	9.917	1.93	16.000	1.61	22.08	0.64
3.917	0.70	10.000	1.93	16.083	1.61	22.17	0.64
4.000	0.70	10.083	1.93	16.167	1.61	22.25	0.64
4.083	0.70	10.167	1.93	16.250	1.61	22.33	0.64

4.167	0.70	10.250	1.93	16.333	0.97	22.42	0.64
4.250	0.70	10.333	2.47	16.417	0.97	22.50	0.64
4.333	0.86	10.417	2.47	16.500	0.97	22.58	0.64
4.417	0.86	10.500	2.47	16.583	0.97	22.67	0.64
4.500	0.86	10.583	2.47	16.667	0.97	22.75	0.64
4.583	0.86	10.667	2.47	16.750	0.97	22.83	0.64
4.667	0.86	10.750	2.47	16.833	0.97	22.92	0.64
4.750	0.86	10.833	3.32	16.917	0.97	23.00	0.64
4.833	0.86	10.917	3.32	17.000	0.97	23.08	0.64
4.917	0.86	11.000	3.32	17.083	0.97	23.17	0.64
5.000	0.86	11.083	3.32	17.167	0.97	23.25	0.64
5.083	0.86	11.167	3.32	17.250	0.97	23.33	0.64
5.167	0.86	11.250	3.32	17.333	0.97	23.42	0.64
5.250	0.86	11.333	5.15	17.417	0.97	23.50	0.64
5.333	0.86	11.417	5.15	17.500	0.97	23.58	0.64
5.417	0.86	11.500	5.15	17.583	0.97	23.67	0.64
5.500	0.86	11.583	5.15	17.667	0.97	23.75	0.64
5.583	0.86	11.667	5.15	17.750	0.97	23.83	0.64
5.667	0.86	11.750	5.15	17.833	0.97	23.92	0.64
5.750	0.86	11.833	15.87	17.917	0.97	24.00	0.64
5.833	0.86	11.917	15.87	18.000	0.97	24.08	0.64
5.917	0.86	12.000	15.87	18.083	0.97	24.17	0.64
6.000	0.86	12.083	65.62	18.167	0.97	24.25	0.64
6.083	0.86	12.167	65.63	18.250	0.97		

Max.Eff.Inten.(mm/hr)= 65.63 93.11
over (min) 5.00 10.00
Storage Coeff. (min)= 2.08 (ii) 9.34 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.31 0.12

TOTALS
PEAK FLOW (cms)= 0.01 0.04 0.049 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 52.62 34.96 36.72
TOTAL RAINFALL (mm)= 53.62 53.62 53.62
RUNOFF COEFFICIENT = 0.98 0.65 0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0401)| OVERFLOW IS OFF

IN= 2---> OUT= 1
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.049	12.25	36.72
OUTFLOW: ID= 1 (0401)	0.430	0.046	12.25	36.72

PEAK FLOW REDUCTION [Qout/Qin](%)= 94.99
 TIME SHIFT OF PEAK FLOW (min)= 0.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0004

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

Area (ha)= 5.39
 Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.86	12.250	65.63	18.33	0.97
0.167	0.00	6.250	0.86	12.333	7.73	18.42	0.97
0.250	0.00	6.333	0.97	12.417	7.72	18.50	0.97
0.333	0.59	6.417	0.97	12.500	7.72	18.58	0.97
0.417	0.59	6.500	0.97	12.583	7.72	18.67	0.97
0.500	0.59	6.583	0.97	12.667	7.72	18.75	0.97
0.583	0.59	6.667	0.97	12.750	7.72	18.83	0.97
0.667	0.59	6.750	0.97	12.833	3.97	18.92	0.97
0.750	0.59	6.833	0.97	12.917	3.97	19.00	0.97
0.833	0.59	6.917	0.97	13.000	3.97	19.08	0.97
0.917	0.59	7.000	0.97	13.083	3.97	19.17	0.97
1.000	0.59	7.083	0.97	13.167	3.97	19.25	0.97
1.083	0.59	7.167	0.97	13.250	3.97	19.33	0.97
1.167	0.59	7.250	0.97	13.333	2.90	19.42	0.97
1.250	0.59	7.333	1.18	13.417	2.90	19.50	0.97

1.333	0.59	7.417	1.18	13.500	2.90	19.58	0.97
1.417	0.59	7.500	1.18	13.583	2.90	19.67	0.97
1.500	0.59	7.583	1.18	13.667	2.90	19.75	0.97
1.583	0.59	7.667	1.18	13.750	2.90	19.83	0.97
1.667	0.59	7.750	1.18	13.833	2.25	19.92	0.97
1.750	0.59	7.833	1.18	13.917	2.25	20.00	0.97
1.833	0.59	7.917	1.18	14.000	2.25	20.08	0.97
1.917	0.59	8.000	1.18	14.083	2.25	20.17	0.97
2.000	0.59	8.083	1.18	14.167	2.25	20.25	0.97
2.083	0.59	8.167	1.18	14.250	2.25	20.33	0.64
2.167	0.59	8.250	1.18	14.333	1.61	20.42	0.64
2.250	0.59	8.333	1.39	14.417	1.61	20.50	0.64
2.333	0.70	8.417	1.39	14.500	1.61	20.58	0.64
2.417	0.70	8.500	1.39	14.583	1.61	20.67	0.64
2.500	0.70	8.583	1.39	14.667	1.61	20.75	0.64
2.583	0.70	8.667	1.39	14.750	1.61	20.83	0.64
2.667	0.70	8.750	1.39	14.833	1.61	20.92	0.64
2.750	0.70	8.833	1.50	14.917	1.61	21.00	0.64
2.833	0.70	8.917	1.50	15.000	1.61	21.08	0.64
2.917	0.70	9.000	1.50	15.083	1.61	21.17	0.64
3.000	0.70	9.083	1.50	15.167	1.61	21.25	0.64
3.083	0.70	9.167	1.50	15.250	1.61	21.33	0.64
3.167	0.70	9.250	1.50	15.333	1.61	21.42	0.64
3.250	0.70	9.333	1.72	15.417	1.61	21.50	0.64
3.333	0.70	9.417	1.72	15.500	1.61	21.58	0.64
3.417	0.70	9.500	1.72	15.583	1.61	21.67	0.64
3.500	0.70	9.583	1.72	15.667	1.61	21.75	0.64
3.583	0.70	9.667	1.72	15.750	1.61	21.83	0.64
3.667	0.70	9.750	1.72	15.833	1.61	21.92	0.64
3.750	0.70	9.833	1.93	15.917	1.61	22.00	0.64
3.833	0.70	9.917	1.93	16.000	1.61	22.08	0.64
3.917	0.70	10.000	1.93	16.083	1.61	22.17	0.64
4.000	0.70	10.083	1.93	16.167	1.61	22.25	0.64
4.083	0.70	10.167	1.93	16.250	1.61	22.33	0.64
4.167	0.70	10.250	1.93	16.333	0.97	22.42	0.64
4.250	0.70	10.333	2.47	16.417	0.97	22.50	0.64
4.333	0.86	10.417	2.47	16.500	0.97	22.58	0.64
4.417	0.86	10.500	2.47	16.583	0.97	22.67	0.64
4.500	0.86	10.583	2.47	16.667	0.97	22.75	0.64
4.583	0.86	10.667	2.47	16.750	0.97	22.83	0.64
4.667	0.86	10.750	2.47	16.833	0.97	22.92	0.64
4.750	0.86	10.833	3.32	16.917	0.97	23.00	0.64
4.833	0.86	10.917	3.32	17.000	0.97	23.08	0.64
4.917	0.86	11.000	3.32	17.083	0.97	23.17	0.64
5.000	0.86	11.083	3.32	17.167	0.97	23.25	0.64
5.083	0.86	11.167	3.32	17.250	0.97	23.33	0.64
5.167	0.86	11.250	3.32	17.333	0.97	23.42	0.64
5.250	0.86	11.333	5.15	17.417	0.97	23.50	0.64
5.333	0.86	11.417	5.15	17.500	0.97	23.58	0.64
5.417	0.86	11.500	5.15	17.583	0.97	23.67	0.64

5.500	0.86	11.583	5.15	17.667	0.97	23.75	0.64
5.583	0.86	11.667	5.15	17.750	0.97	23.83	0.64
5.667	0.86	11.750	5.15	17.833	0.97	23.92	0.64
5.750	0.86	11.833	15.87	17.917	0.97	24.00	0.64
5.833	0.86	11.917	15.87	18.000	0.97	24.08	0.64
5.917	0.86	12.000	15.87	18.083	0.97	24.17	0.64
6.000	0.86	12.083	65.62	18.167	0.97	24.25	0.64
6.083	0.86	12.167	65.63	18.250	0.97		

Max.Eff.Inten.(mm/hr)=	65.63	55.29
over (min)	5.00	15.00
Storage Coeff. (min)=	4.44 (ii)	13.38 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.23	0.08

PEAK FLOW (cms)=	0.36	0.23	0.559 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	52.62	28.27	37.52
TOTAL RAINFALL (mm)=	53.62	53.62	53.62
RUNOFF COEFFICIENT =	0.98	0.53	0.70

TOTALS

0.250	0.00	6.333	0.97	12.417	7.72	18.50	0.97
0.333	0.59	6.417	0.97	12.500	7.72	18.58	0.97
0.417	0.59	6.500	0.97	12.583	7.72	18.67	0.97
0.500	0.59	6.583	0.97	12.667	7.72	18.75	0.97
0.583	0.59	6.667	0.97	12.750	7.72	18.83	0.97
0.667	0.59	6.750	0.97	12.833	3.97	18.92	0.97
0.750	0.59	6.833	0.97	12.917	3.97	19.00	0.97
0.833	0.59	6.917	0.97	13.000	3.97	19.08	0.97
0.917	0.59	7.000	0.97	13.083	3.97	19.17	0.97
1.000	0.59	7.083	0.97	13.167	3.97	19.25	0.97
1.083	0.59	7.167	0.97	13.250	3.97	19.33	0.97
1.167	0.59	7.250	0.97	13.333	2.90	19.42	0.97
1.250	0.59	7.333	1.18	13.417	2.90	19.50	0.97
1.333	0.59	7.417	1.18	13.500	2.90	19.58	0.97
1.417	0.59	7.500	1.18	13.583	2.90	19.67	0.97
1.500	0.59	7.583	1.18	13.667	2.90	19.75	0.97
1.583	0.59	7.667	1.18	13.750	2.90	19.83	0.97
1.667	0.59	7.750	1.18	13.833	2.25	19.92	0.97
1.750	0.59	7.833	1.18	13.917	2.25	20.00	0.97
1.833	0.59	7.917	1.18	14.000	2.25	20.08	0.97
1.917	0.59	8.000	1.18	14.083	2.25	20.17	0.97
2.000	0.59	8.083	1.18	14.167	2.25	20.25	0.97
2.083	0.59	8.167	1.18	14.250	2.25	20.33	0.64
2.167	0.59	8.250	1.18	14.333	1.61	20.42	0.64
2.250	0.59	8.333	1.39	14.417	1.61	20.50	0.64
2.333	0.70	8.417	1.39	14.500	1.61	20.58	0.64
2.417	0.70	8.500	1.39	14.583	1.61	20.67	0.64
2.500	0.70	8.583	1.39	14.667	1.61	20.75	0.64
2.583	0.70	8.667	1.39	14.750	1.61	20.83	0.64
2.667	0.70	8.750	1.39	14.833	1.61	20.92	0.64
2.750	0.70	8.833	1.50	14.917	1.61	21.00	0.64
2.833	0.70	8.917	1.50	15.000	1.61	21.08	0.64
2.917	0.70	9.000	1.50	15.083	1.61	21.17	0.64
3.000	0.70	9.083	1.50	15.167	1.61	21.25	0.64
3.083	0.70	9.167	1.50	15.250	1.61	21.33	0.64
3.167	0.70	9.250	1.50	15.333	1.61	21.42	0.64
3.250	0.70	9.333	1.72	15.417	1.61	21.50	0.64
3.333	0.70	9.417	1.72	15.500	1.61	21.58	0.64
3.417	0.70	9.500	1.72	15.583	1.61	21.67	0.64
3.500	0.70	9.583	1.72	15.667	1.61	21.75	0.64
3.583	0.70	9.667	1.72	15.750	1.61	21.83	0.64
3.667	0.70	9.750	1.72	15.833	1.61	21.92	0.64
3.750	0.70	9.833	1.93	15.917	1.61	22.00	0.64
3.833	0.70	9.917	1.93	16.000	1.61	22.08	0.64
3.917	0.70	10.000	1.93	16.083	1.61	22.17	0.64
4.000	0.70	10.083	1.93	16.167	1.61	22.25	0.64
4.083	0.70	10.167	1.93	16.250	1.61	22.33	0.64
4.167	0.70	10.250	1.93	16.333	0.97	22.42	0.64
4.250	0.70	10.333	2.47	16.417	0.97	22.50	0.64
4.333	0.86	10.417	2.47	16.500	0.97	22.58	0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	3.45
STANDHYD (0201)	Total Imp(%)=	57.00 Dir. Conn.(%)= 52.00
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.86	12.250	65.63	18.33	0.97
0.167	0.00	6.250	0.86	12.333	7.73	18.42	0.97

4.417	0.86	10.500	2.47	16.583	0.97	22.67	0.64
4.500	0.86	10.583	2.47	16.667	0.97	22.75	0.64
4.583	0.86	10.667	2.47	16.750	0.97	22.83	0.64
4.667	0.86	10.750	2.47	16.833	0.97	22.92	0.64
4.750	0.86	10.833	3.32	16.917	0.97	23.00	0.64
4.833	0.86	10.917	3.32	17.000	0.97	23.08	0.64
4.917	0.86	11.000	3.32	17.083	0.97	23.17	0.64
5.000	0.86	11.083	3.32	17.167	0.97	23.25	0.64
5.083	0.86	11.167	3.32	17.250	0.97	23.33	0.64
5.167	0.86	11.250	3.32	17.333	0.97	23.42	0.64
5.250	0.86	11.333	5.15	17.417	0.97	23.50	0.64
5.333	0.86	11.417	5.15	17.500	0.97	23.58	0.64
5.417	0.86	11.500	5.15	17.583	0.97	23.67	0.64
5.500	0.86	11.583	5.15	17.667	0.97	23.75	0.64
5.583	0.86	11.667	5.15	17.750	0.97	23.83	0.64
5.667	0.86	11.750	5.15	17.833	0.97	23.92	0.64
5.750	0.86	11.833	15.87	17.917	0.97	24.00	0.64
5.833	0.86	11.917	15.87	18.000	0.97	24.08	0.64
5.917	0.86	12.000	15.87	18.083	0.97	24.17	0.64
6.000	0.86	12.083	65.62	18.167	0.97	24.25	0.64
6.083	0.86	12.167	65.63	18.250	0.97		

Max.Eff.Inten.(mm/hr)= 65.63 60.62
over (min) 5.00 15.00
Storage Coeff. (min)= 3.88 (ii) 12.50 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.08

PEAK FLOW (cms)= 0.32 0.16
TIME TO PEAK (hrs)= 12.25 12.33 12.25
RUNOFF VOLUME (mm)= 52.62 36.78 45.01
TOTAL RAINFALL (mm)= 53.62 53.62 53.62
RUNOFF COEFFICIENT = 0.98 0.69 0.84

TOTALS

0.459 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):	3.45	0.459	12.25	45.01
+ ID2= 2 (0202):	5.39	0.559	12.25	37.52

=====

ID = 3 (0901): 8.84 1.018 12.25 40.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):	8.84	1.018	12.25	40.44
+ ID2= 2 (0401):	0.43	0.046	12.25	36.72
=====				
ID = 1 (0901):	9.27	1.064	12.25	40.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSSS UUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat

Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\75
ed505-e46b-4c42-9b07-f982ce834222\sc

Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\0bf8b14-d4aa-429f-ade8-fac37fdee83\75
ed505-e46b-4c42-9b07-f982ce834222\sc

DATE: 12/05/2025

TIME: 02:32:42

USER:

COMMENTS: _____

```

-----
| CALIB                               |
| STANDHYD ( 0203)                   |
| ID= 1 DT= 5.0 min                   |
|-----|

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Area (ha)= 0.43
Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

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                IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)= 0.22      0.22
Dep. Storage (mm)= 1.00     5.12
Average Slope (%)= 1.00     2.00
Length (m)= 53.54          40.00
Mannings n = 0.013         0.250

```

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

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

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```

-----
| READ STORM |
|-----|
| Ptotal= 71.58 mm |
|-----|

```

Filename: C:\Users\kbelanger\AppData\Local\Temp\96eca046-ece6-4e0a-883e-8ece97edf8d5\c4dc9d16

Comments: 5yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.29	12.50	10.31	18.75	1.29
0.25	0.79	6.50	1.29	12.75	5.30	19.00	1.29
0.50	0.79	6.75	1.29	13.00	5.30	19.25	1.29
0.75	0.79	7.00	1.29	13.25	3.87	19.50	1.29
1.00	0.79	7.25	1.57	13.50	3.87	19.75	1.29
1.25	0.79	7.50	1.57	13.75	3.01	20.00	1.29
1.50	0.79	7.75	1.57	14.00	3.01	20.25	0.86
1.75	0.79	8.00	1.57	14.25	2.15	20.50	0.86
2.00	0.79	8.25	1.86	14.50	2.15	20.75	0.86
2.25	0.93	8.50	1.86	14.75	2.15	21.00	0.86
2.50	0.93	8.75	2.00	15.00	2.15	21.25	0.86
2.75	0.93	9.00	2.00	15.25	2.15	21.50	0.86
3.00	0.93	9.25	2.29	15.50	2.15	21.75	0.86
3.25	0.93	9.50	2.29	15.75	2.15	22.00	0.86
3.50	0.93	9.75	2.58	16.00	2.15	22.25	0.86
3.75	0.93	10.00	2.58	16.25	1.29	22.50	0.86
4.00	0.93	10.25	3.29	16.50	1.29	22.75	0.86
4.25	1.15	10.50	3.29	16.75	1.29	23.00	0.86
4.50	1.15	10.75	4.44	17.00	1.29	23.25	0.86
4.75	1.15	11.00	4.44	17.25	1.29	23.50	0.86
5.00	1.15	11.25	6.87	17.50	1.29	23.75	0.86
5.25	1.15	11.50	6.87	17.75	1.29	24.00	0.86
5.50	1.15	11.75	21.19	18.00	1.29		
5.75	1.15	12.00	87.61	18.25	1.29		
6.00	1.15	12.25	10.31	18.50	1.29		

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                ---- TRANSFORMED HYETOGRAPH ----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.15	12.250	87.61	18.33	1.29
0.167	0.00	6.250	1.15	12.333	10.32	18.42	1.29
0.250	0.00	6.333	1.29	12.417	10.31	18.50	1.29
0.333	0.79	6.417	1.29	12.500	10.31	18.58	1.29
0.417	0.79	6.500	1.29	12.583	10.31	18.67	1.29
0.500	0.79	6.583	1.29	12.667	10.31	18.75	1.29
0.583	0.79	6.667	1.29	12.750	10.31	18.83	1.29
0.667	0.79	6.750	1.29	12.833	5.30	18.92	1.29
0.750	0.79	6.833	1.29	12.917	5.30	19.00	1.29
0.833	0.79	6.917	1.29	13.000	5.30	19.08	1.29
0.917	0.79	7.000	1.29	13.083	5.30	19.17	1.29
1.000	0.79	7.083	1.29	13.167	5.30	19.25	1.29
1.083	0.79	7.167	1.29	13.250	5.30	19.33	1.29
1.167	0.79	7.250	1.29	13.333	3.87	19.42	1.29
1.250	0.79	7.333	1.57	13.417	3.87	19.50	1.29
1.333	0.79	7.417	1.57	13.500	3.87	19.58	1.29
1.417	0.79	7.500	1.57	13.583	3.87	19.67	1.29
1.500	0.79	7.583	1.57	13.667	3.87	19.75	1.29
1.583	0.79	7.667	1.57	13.750	3.87	19.83	1.29
1.667	0.79	7.750	1.57	13.833	3.01	19.92	1.29
1.750	0.79	7.833	1.57	13.917	3.01	20.00	1.29
1.833	0.79	7.917	1.57	14.000	3.01	20.08	1.29
1.917	0.79	8.000	1.57	14.083	3.01	20.17	1.29
2.000	0.79	8.083	1.57	14.167	3.01	20.25	1.29
2.083	0.79	8.167	1.57	14.250	3.01	20.33	0.86
2.167	0.79	8.250	1.57	14.333	2.15	20.42	0.86
2.250	0.79	8.333	1.86	14.417	2.15	20.50	0.86
2.333	0.93	8.417	1.86	14.500	2.15	20.58	0.86
2.417	0.93	8.500	1.86	14.583	2.15	20.67	0.86
2.500	0.93	8.583	1.86	14.667	2.15	20.75	0.86
2.583	0.93	8.667	1.86	14.750	2.15	20.83	0.86
2.667	0.93	8.750	1.86	14.833	2.15	20.92	0.86

2.750	0.93	8.833	2.00	14.917	2.15	21.00	0.86
2.833	0.93	8.917	2.00	15.000	2.15	21.08	0.86
2.917	0.93	9.000	2.00	15.083	2.15	21.17	0.86
3.000	0.93	9.083	2.00	15.167	2.15	21.25	0.86
3.083	0.93	9.167	2.00	15.250	2.15	21.33	0.86
3.167	0.93	9.250	2.00	15.333	2.15	21.42	0.86
3.250	0.93	9.333	2.29	15.417	2.15	21.50	0.86
3.333	0.93	9.417	2.29	15.500	2.15	21.58	0.86
3.417	0.93	9.500	2.29	15.583	2.15	21.67	0.86
3.500	0.93	9.583	2.29	15.667	2.15	21.75	0.86
3.583	0.93	9.667	2.29	15.750	2.15	21.83	0.86
3.667	0.93	9.750	2.29	15.833	2.15	21.92	0.86
3.750	0.93	9.833	2.58	15.917	2.15	22.00	0.86
3.833	0.93	9.917	2.58	16.000	2.15	22.08	0.86
3.917	0.93	10.000	2.58	16.083	2.15	22.17	0.86
4.000	0.93	10.083	2.58	16.167	2.15	22.25	0.86
4.083	0.93	10.167	2.58	16.250	2.15	22.33	0.86
4.167	0.93	10.250	2.58	16.333	1.29	22.42	0.86
4.250	0.93	10.333	3.29	16.417	1.29	22.50	0.86
4.333	1.15	10.417	3.29	16.500	1.29	22.58	0.86
4.417	1.15	10.500	3.29	16.583	1.29	22.67	0.86
4.500	1.15	10.583	3.29	16.667	1.29	22.75	0.86
4.583	1.15	10.667	3.29	16.750	1.29	22.83	0.86
4.667	1.15	10.750	3.29	16.833	1.29	22.92	0.86
4.750	1.15	10.833	4.44	16.917	1.29	23.00	0.86
4.833	1.15	10.917	4.44	17.000	1.29	23.08	0.86
4.917	1.15	11.000	4.44	17.083	1.29	23.17	0.86
5.000	1.15	11.083	4.44	17.167	1.29	23.25	0.86
5.083	1.15	11.167	4.44	17.250	1.29	23.33	0.86
5.167	1.15	11.250	4.44	17.333	1.29	23.42	0.86
5.250	1.15	11.333	6.87	17.417	1.29	23.50	0.86
5.333	1.15	11.417	6.87	17.500	1.29	23.58	0.86
5.417	1.15	11.500	6.87	17.583	1.29	23.67	0.86
5.500	1.15	11.583	6.87	17.667	1.29	23.75	0.86
5.583	1.15	11.667	6.87	17.750	1.29	23.83	0.86
5.667	1.15	11.750	6.87	17.833	1.29	23.92	0.86
5.750	1.15	11.833	21.19	17.917	1.29	24.00	0.86
5.833	1.15	11.917	21.19	18.000	1.29	24.08	0.86
5.917	1.15	12.000	21.19	18.083	1.29	24.17	0.86
6.000	1.15	12.083	87.61	18.167	1.29	24.25	0.86
6.083	1.15	12.167	87.61	18.250	1.29		

Max.Eff.Inten.(mm/hr)= 87.61 134.46
over (min) 5.00 10.00
Storage Coeff. (min)= 1.85 (ii) 8.12 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.13

PEAK FLOW (cms)= 0.01 0.06 0.074 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25

TOTALS

RUNOFF VOLUME (mm)= 70.58 51.52 53.42
TOTAL RAINFALL (mm)= 71.58 71.58 71.58
RUNOFF COEFFICIENT = 0.99 0.72 0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0401) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
DT= 5.0 min
OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.1000 0.0017
0.0490 0.0004 | 0.1130 0.0026
0.0850 0.0009 | 0.1240 0.0033

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 (0203) 0.430 0.074 12.25 53.42
OUTFLOW: ID= 1 (0401) 0.430 0.067 12.25 53.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 90.93
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.0007

| CALIB |
| STANDHYD (0202) | Area (ha)= 5.39
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.86 2.53
Dep. Storage (mm)= 1.00 3.40
Average Slope (%)= 1.00 2.00
Length (m)= 189.56 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.15	12.250	87.61	18.33	1.29
0.167	0.00	6.250	1.15	12.333	10.32	18.42	1.29
0.250	0.00	6.333	1.29	12.417	10.31	18.50	1.29
0.333	0.79	6.417	1.29	12.500	10.31	18.58	1.29
0.417	0.79	6.500	1.29	12.583	10.31	18.67	1.29
0.500	0.79	6.583	1.29	12.667	10.31	18.75	1.29
0.583	0.79	6.667	1.29	12.750	10.31	18.83	1.29
0.667	0.79	6.750	1.29	12.833	5.30	18.92	1.29
0.750	0.79	6.833	1.29	12.917	5.30	19.00	1.29
0.833	0.79	6.917	1.29	13.000	5.30	19.08	1.29
0.917	0.79	7.000	1.29	13.083	5.30	19.17	1.29
1.000	0.79	7.083	1.29	13.167	5.30	19.25	1.29
1.083	0.79	7.167	1.29	13.250	5.30	19.33	1.29
1.167	0.79	7.250	1.29	13.333	3.87	19.42	1.29
1.250	0.79	7.333	1.57	13.417	3.87	19.50	1.29
1.333	0.79	7.417	1.57	13.500	3.87	19.58	1.29
1.417	0.79	7.500	1.57	13.583	3.87	19.67	1.29
1.500	0.79	7.583	1.57	13.667	3.87	19.75	1.29
1.583	0.79	7.667	1.57	13.750	3.87	19.83	1.29
1.667	0.79	7.750	1.57	13.833	3.01	19.92	1.29
1.750	0.79	7.833	1.57	13.917	3.01	20.00	1.29
1.833	0.79	7.917	1.57	14.000	3.01	20.08	1.29
1.917	0.79	8.000	1.57	14.083	3.01	20.17	1.29
2.000	0.79	8.083	1.57	14.167	3.01	20.25	1.29
2.083	0.79	8.167	1.57	14.250	3.01	20.33	0.86
2.167	0.79	8.250	1.57	14.333	2.15	20.42	0.86
2.250	0.79	8.333	1.86	14.417	2.15	20.50	0.86
2.333	0.93	8.417	1.86	14.500	2.15	20.58	0.86
2.417	0.93	8.500	1.86	14.583	2.15	20.67	0.86
2.500	0.93	8.583	1.86	14.667	2.15	20.75	0.86
2.583	0.93	8.667	1.86	14.750	2.15	20.83	0.86
2.667	0.93	8.750	1.86	14.833	2.15	20.92	0.86
2.750	0.93	8.833	2.00	14.917	2.15	21.00	0.86
2.833	0.93	8.917	2.00	15.000	2.15	21.08	0.86
2.917	0.93	9.000	2.00	15.083	2.15	21.17	0.86
3.000	0.93	9.083	2.00	15.167	2.15	21.25	0.86
3.083	0.93	9.167	2.00	15.250	2.15	21.33	0.86
3.167	0.93	9.250	2.00	15.333	2.15	21.42	0.86
3.250	0.93	9.333	2.29	15.417	2.15	21.50	0.86
3.333	0.93	9.417	2.29	15.500	2.15	21.58	0.86
3.417	0.93	9.500	2.29	15.583	2.15	21.67	0.86
3.500	0.93	9.583	2.29	15.667	2.15	21.75	0.86
3.583	0.93	9.667	2.29	15.750	2.15	21.83	0.86
3.667	0.93	9.750	2.29	15.833	2.15	21.92	0.86
3.750	0.93	9.833	2.58	15.917	2.15	22.00	0.86
3.833	0.93	9.917	2.58	16.000	2.15	22.08	0.86
3.917	0.93	10.000	2.58	16.083	2.15	22.17	0.86
4.000	0.93	10.083	2.58	16.167	2.15	22.25	0.86

4.083	0.93	10.167	2.58	16.250	2.15	22.33	0.86
4.167	0.93	10.250	2.58	16.333	1.29	22.42	0.86
4.250	0.93	10.333	3.29	16.417	1.29	22.50	0.86
4.333	1.15	10.417	3.29	16.500	1.29	22.58	0.86
4.417	1.15	10.500	3.29	16.583	1.29	22.67	0.86
4.500	1.15	10.583	3.29	16.667	1.29	22.75	0.86
4.583	1.15	10.667	3.29	16.750	1.29	22.83	0.86
4.667	1.15	10.750	3.29	16.833	1.29	22.92	0.86
4.750	1.15	10.833	4.44	16.917	1.29	23.00	0.86
4.833	1.15	10.917	4.44	17.000	1.29	23.08	0.86
4.917	1.15	11.000	4.44	17.083	1.29	23.17	0.86
5.000	1.15	11.083	4.44	17.167	1.29	23.25	0.86
5.083	1.15	11.167	4.44	17.250	1.29	23.33	0.86
5.167	1.15	11.250	4.44	17.333	1.29	23.42	0.86
5.250	1.15	11.333	6.87	17.417	1.29	23.50	0.86
5.333	1.15	11.417	6.87	17.500	1.29	23.58	0.86
5.417	1.15	11.500	6.87	17.583	1.29	23.67	0.86
5.500	1.15	11.583	6.87	17.667	1.29	23.75	0.86
5.583	1.15	11.667	6.87	17.750	1.29	23.83	0.86
5.667	1.15	11.750	6.87	17.833	1.29	23.92	0.86
5.750	1.15	11.833	21.19	17.917	1.29	24.00	0.86
5.833	1.15	11.917	21.19	18.000	1.29	24.08	0.86
5.917	1.15	12.000	21.19	18.083	1.29	24.17	0.86
6.000	1.15	12.083	87.61	18.167	1.29	24.25	0.86
6.083	1.15	12.167	87.61	18.250	1.29		
Max.Eff.Inten.(mm/hr)=		87.61	83.74				
over (min)		5.00	15.00				
Storage Coeff. (min)=		3.95 (ii)	11.53 (ii)				
Unit Hyd. Tpeak (min)=		5.00	15.00				
Unit Hyd. peak (cms)=		0.24	0.09				
				TOTALS			
PEAK FLOW (cms)=		0.49	0.37	0.817 (iii)			
TIME TO PEAK (hrs)=		12.25	12.33	12.25			
RUNOFF VOLUME (mm)=		70.58	43.23	53.62			
TOTAL RAINFALL (mm)=		71.58	71.58	71.58			
RUNOFF COEFFICIENT =		0.99	0.60	0.75			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0201) | Area (ha)= 3.45

|ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.97	1.48
Dep. Storage	(mm)=	1.00	3.39
Average Slope	(%)=	1.00	2.00
Length	(m)=	151.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.15	12.250	87.61	18.33	1.29
0.167	0.00	6.250	1.15	12.333	10.32	18.42	1.29
0.250	0.00	6.333	1.29	12.417	10.31	18.50	1.29
0.333	0.79	6.417	1.29	12.500	10.31	18.58	1.29
0.417	0.79	6.500	1.29	12.583	10.31	18.67	1.29
0.500	0.79	6.583	1.29	12.667	10.31	18.75	1.29
0.583	0.79	6.667	1.29	12.750	10.31	18.83	1.29
0.667	0.79	6.750	1.29	12.833	5.30	18.92	1.29
0.750	0.79	6.833	1.29	12.917	5.30	19.00	1.29
0.833	0.79	6.917	1.29	13.000	5.30	19.08	1.29
0.917	0.79	7.000	1.29	13.083	5.30	19.17	1.29
1.000	0.79	7.083	1.29	13.167	5.30	19.25	1.29
1.083	0.79	7.167	1.29	13.250	5.30	19.33	1.29
1.167	0.79	7.250	1.29	13.333	3.87	19.42	1.29
1.250	0.79	7.333	1.57	13.417	3.87	19.50	1.29
1.333	0.79	7.417	1.57	13.500	3.87	19.58	1.29
1.417	0.79	7.500	1.57	13.583	3.87	19.67	1.29
1.500	0.79	7.583	1.57	13.667	3.87	19.75	1.29
1.583	0.79	7.667	1.57	13.750	3.87	19.83	1.29
1.667	0.79	7.750	1.57	13.833	3.01	19.92	1.29
1.750	0.79	7.833	1.57	13.917	3.01	20.00	1.29
1.833	0.79	7.917	1.57	14.000	3.01	20.08	1.29
1.917	0.79	8.000	1.57	14.083	3.01	20.17	1.29
2.000	0.79	8.083	1.57	14.167	3.01	20.25	1.29
2.083	0.79	8.167	1.57	14.250	3.01	20.33	0.86
2.167	0.79	8.250	1.57	14.333	2.15	20.42	0.86
2.250	0.79	8.333	1.86	14.417	2.15	20.50	0.86
2.333	0.93	8.417	1.86	14.500	2.15	20.58	0.86
2.417	0.93	8.500	1.86	14.583	2.15	20.67	0.86
2.500	0.93	8.583	1.86	14.667	2.15	20.75	0.86
2.583	0.93	8.667	1.86	14.750	2.15	20.83	0.86
2.667	0.93	8.750	1.86	14.833	2.15	20.92	0.86
2.750	0.93	8.833	2.00	14.917	2.15	21.00	0.86
2.833	0.93	8.917	2.00	15.000	2.15	21.08	0.86
2.917	0.93	9.000	2.00	15.083	2.15	21.17	0.86

3.000	0.93	9.083	2.00	15.167	2.15	21.25	0.86
3.083	0.93	9.167	2.00	15.250	2.15	21.33	0.86
3.167	0.93	9.250	2.00	15.333	2.15	21.42	0.86
3.250	0.93	9.333	2.29	15.417	2.15	21.50	0.86
3.333	0.93	9.417	2.29	15.500	2.15	21.58	0.86
3.417	0.93	9.500	2.29	15.583	2.15	21.67	0.86
3.500	0.93	9.583	2.29	15.667	2.15	21.75	0.86
3.583	0.93	9.667	2.29	15.750	2.15	21.83	0.86
3.667	0.93	9.750	2.29	15.833	2.15	21.92	0.86
3.750	0.93	9.833	2.58	15.917	2.15	22.00	0.86
3.833	0.93	9.917	2.58	16.000	2.15	22.08	0.86
3.917	0.93	10.000	2.58	16.083	2.15	22.17	0.86
4.000	0.93	10.083	2.58	16.167	2.15	22.25	0.86
4.083	0.93	10.167	2.58	16.250	2.15	22.33	0.86
4.167	0.93	10.250	2.58	16.333	1.29	22.42	0.86
4.250	0.93	10.333	3.29	16.417	1.29	22.50	0.86
4.333	1.15	10.417	3.29	16.500	1.29	22.58	0.86
4.417	1.15	10.500	3.29	16.583	1.29	22.67	0.86
4.500	1.15	10.583	3.29	16.667	1.29	22.75	0.86
4.583	1.15	10.667	3.29	16.750	1.29	22.83	0.86
4.667	1.15	10.750	3.29	16.833	1.29	22.92	0.86
4.750	1.15	10.833	4.44	16.917	1.29	23.00	0.86
4.833	1.15	10.917	4.44	17.000	1.29	23.08	0.86
4.917	1.15	11.000	4.44	17.083	1.29	23.17	0.86
5.000	1.15	11.083	4.44	17.167	1.29	23.25	0.86
5.083	1.15	11.167	4.44	17.250	1.29	23.33	0.86
5.167	1.15	11.250	4.44	17.333	1.29	23.42	0.86
5.250	1.15	11.333	6.87	17.417	1.29	23.50	0.86
5.333	1.15	11.417	6.87	17.500	1.29	23.58	0.86
5.417	1.15	11.500	6.87	17.583	1.29	23.67	0.86
5.500	1.15	11.583	6.87	17.667	1.29	23.75	0.86
5.583	1.15	11.667	6.87	17.750	1.29	23.83	0.86
5.667	1.15	11.750	6.87	17.833	1.29	23.92	0.86
5.750	1.15	11.833	21.19	17.917	1.29	24.00	0.86
5.833	1.15	11.917	21.19	18.000	1.29	24.08	0.86
5.917	1.15	12.000	21.19	18.083	1.29	24.17	0.86
6.000	1.15	12.083	87.61	18.167	1.29	24.25	0.86
6.083	1.15	12.167	87.61	18.250	1.29		

Max. Eff. Inten. (mm/hr)=	87.61	86.41
over (min)	5.00	15.00
Storage Coeff. (min)=	3.46 (ii)	10.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.26	0.09

PEAK FLOW (cms)=	0.43	0.24	0.645 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	70.58	53.68	62.47
TOTAL RAINFALL (mm)=	71.58	71.58	71.58
RUNOFF COEFFICIENT =	0.99	0.75	0.87

TOTALS

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

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-facf37fdee83\ed5
 e46c4-e6b9-4944-8555-7afed1d88ad3\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-facf37fdee83\ed5
 e46c4-e6b9-4944-8555-7afed1d88ad3\sc

```

-----
| ADD HYD ( 0901)|
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0201):  3.45  0.645  12.25  62.47
+ ID2= 2 ( 0202):  5.39  0.817  12.25  53.62
=====
ID = 3 ( 0901):  8.84  1.462  12.25  57.07

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DATE: 12/05/2025 TIME: 02:32:42

USER:

COMMENTS: _____

```

-----
| ADD HYD ( 0901)|
| 3 + 2 = 1 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  1.462  12.25  57.07
+ ID2= 2 ( 0401):  0.43  0.067  12.25  53.42
=====
ID = 1 ( 0901):  9.27  1.529  12.25  56.91

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

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

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-----
| READ STORM |
|            |
| Ptotal= 83.29 mm |
|            |
-----
Filename: C:\Users\kbelanger\AppData\Local\Temp\
          96eca046-ece6-4e0a-883e-8ece97edf8d5\1e608f10
Comments: 10yr 24hr 15min SCS Type II

```

```

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLLL

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.50	12.50	11.99	18.75	1.50
0.25	0.92	6.50	1.50	12.75	6.16	19.00	1.50
0.50	0.92	6.75	1.50	13.00	6.16	19.25	1.50
0.75	0.92	7.00	1.50	13.25	4.50	19.50	1.50
1.00	0.92	7.25	1.83	13.50	4.50	19.75	1.50
1.25	0.92	7.50	1.83	13.75	3.50	20.00	1.50
1.50	0.92	7.75	1.83	14.00	3.50	20.25	1.00
1.75	0.92	8.00	1.83	14.25	2.50	20.50	1.00
2.00	0.92	8.25	2.17	14.50	2.50	20.75	1.00
2.25	1.08	8.50	2.17	14.75	2.50	21.00	1.00
2.50	1.08	8.75	2.33	15.00	2.50	21.25	1.00

2.75	1.08	9.00	2.33	15.25	2.50	21.50	1.00
3.00	1.08	9.25	2.67	15.50	2.50	21.75	1.00
3.25	1.08	9.50	2.67	15.75	2.50	22.00	1.00
3.50	1.08	9.75	3.00	16.00	2.50	22.25	1.00
3.75	1.08	10.00	3.00	16.25	1.50	22.50	1.00
4.00	1.08	10.25	3.83	16.50	1.50	22.75	1.00
4.25	1.33	10.50	3.83	16.75	1.50	23.00	1.00
4.50	1.33	10.75	5.16	17.00	1.50	23.25	1.00
4.75	1.33	11.00	5.16	17.25	1.50	23.50	1.00
5.00	1.33	11.25	8.00	17.50	1.50	23.75	1.00
5.25	1.33	11.50	8.00	17.75	1.50	24.00	1.00
5.50	1.33	11.75	24.65	18.00	1.50		
5.75	1.33	12.00	101.95	18.25	1.50		
6.00	1.33	12.25	11.99	18.50	1.50		

1.333	0.92	7.417	1.83	13.500	4.50	19.58	1.50
1.417	0.92	7.500	1.83	13.583	4.50	19.67	1.50
1.500	0.92	7.583	1.83	13.667	4.50	19.75	1.50
1.583	0.92	7.667	1.83	13.750	4.50	19.83	1.50
1.667	0.92	7.750	1.83	13.833	3.50	19.92	1.50
1.750	0.92	7.833	1.83	13.917	3.50	20.00	1.50
1.833	0.92	7.917	1.83	14.000	3.50	20.08	1.50
1.917	0.92	8.000	1.83	14.083	3.50	20.17	1.50
2.000	0.92	8.083	1.83	14.167	3.50	20.25	1.50
2.083	0.92	8.167	1.83	14.250	3.50	20.33	1.00
2.167	0.92	8.250	1.83	14.333	2.50	20.42	1.00
2.250	0.92	8.333	2.17	14.417	2.50	20.50	1.00
2.333	1.08	8.417	2.17	14.500	2.50	20.58	1.00
2.417	1.08	8.500	2.17	14.583	2.50	20.67	1.00
2.500	1.08	8.583	2.17	14.667	2.50	20.75	1.00
2.583	1.08	8.667	2.17	14.750	2.50	20.83	1.00
2.667	1.08	8.750	2.17	14.833	2.50	20.92	1.00
2.750	1.08	8.833	2.33	14.917	2.50	21.00	1.00
2.833	1.08	8.917	2.33	15.000	2.50	21.08	1.00
2.917	1.08	9.000	2.33	15.083	2.50	21.17	1.00
3.000	1.08	9.083	2.33	15.167	2.50	21.25	1.00
3.083	1.08	9.167	2.33	15.250	2.50	21.33	1.00
3.167	1.08	9.250	2.33	15.333	2.50	21.42	1.00
3.250	1.08	9.333	2.67	15.417	2.50	21.50	1.00
3.333	1.08	9.417	2.67	15.500	2.50	21.58	1.00
3.417	1.08	9.500	2.67	15.583	2.50	21.67	1.00
3.500	1.08	9.583	2.67	15.667	2.50	21.75	1.00
3.583	1.08	9.667	2.67	15.750	2.50	21.83	1.00
3.667	1.08	9.750	2.67	15.833	2.50	21.92	1.00
3.750	1.08	9.833	3.00	15.917	2.50	22.00	1.00
3.833	1.08	9.917	3.00	16.000	2.50	22.08	1.00
3.917	1.08	10.000	3.00	16.083	2.50	22.17	1.00
4.000	1.08	10.083	3.00	16.167	2.50	22.25	1.00
4.083	1.08	10.167	3.00	16.250	2.50	22.33	1.00
4.167	1.08	10.250	3.00	16.333	1.50	22.42	1.00
4.250	1.08	10.333	3.83	16.417	1.50	22.50	1.00
4.333	1.33	10.417	3.83	16.500	1.50	22.58	1.00
4.417	1.33	10.500	3.83	16.583	1.50	22.67	1.00
4.500	1.33	10.583	3.83	16.667	1.50	22.75	1.00
4.583	1.33	10.667	3.83	16.750	1.50	22.83	1.00
4.667	1.33	10.750	3.83	16.833	1.50	22.92	1.00
4.750	1.33	10.833	5.16	16.917	1.50	23.00	1.00
4.833	1.33	10.917	5.16	17.000	1.50	23.08	1.00
4.917	1.33	11.000	5.16	17.083	1.50	23.17	1.00
5.000	1.33	11.083	5.16	17.167	1.50	23.25	1.00
5.083	1.33	11.167	5.16	17.250	1.50	23.33	1.00
5.167	1.33	11.250	5.16	17.333	1.50	23.42	1.00
5.250	1.33	11.333	8.00	17.417	1.50	23.50	1.00
5.333	1.33	11.417	8.00	17.500	1.50	23.58	1.00
5.417	1.33	11.500	8.00	17.583	1.50	23.67	1.00

 CALIB
 STANDHYD (0203)
 ID= 1 DT= 5.0 min

Area (ha)= 0.43
 Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.33	12.250	101.95	18.33	1.50
0.167	0.00	6.250	1.33	12.333	12.01	18.42	1.50
0.250	0.00	6.333	1.50	12.417	11.99	18.50	1.50
0.333	0.92	6.417	1.50	12.500	11.99	18.58	1.50
0.417	0.92	6.500	1.50	12.583	11.99	18.67	1.50
0.500	0.92	6.583	1.50	12.667	11.99	18.75	1.50
0.583	0.92	6.667	1.50	12.750	11.99	18.83	1.50
0.667	0.92	6.750	1.50	12.833	6.16	18.92	1.50
0.750	0.92	6.833	1.50	12.917	6.16	19.00	1.50
0.833	0.92	6.917	1.50	13.000	6.16	19.08	1.50
0.917	0.92	7.000	1.50	13.083	6.16	19.17	1.50
1.000	0.92	7.083	1.50	13.167	6.16	19.25	1.50
1.083	0.92	7.167	1.50	13.250	6.16	19.33	1.50
1.167	0.92	7.250	1.50	13.333	4.50	19.42	1.50
1.250	0.92	7.333	1.83	13.417	4.50	19.50	1.50

5.500	1.33	11.583	8.00	17.667	1.50	23.75	1.00
5.583	1.33	11.667	8.00	17.750	1.50	23.83	1.00
5.667	1.33	11.750	8.00	17.833	1.50	23.92	1.00
5.750	1.33	11.833	24.65	17.917	1.50	24.00	1.00
5.833	1.33	11.917	24.65	18.000	1.50	24.08	1.00
5.917	1.33	12.000	24.65	18.083	1.50	24.17	1.00
6.000	1.33	12.083	101.94	18.167	1.50	24.25	1.00
6.083	1.33	12.167	101.95	18.250	1.50		

Max.Eff.Inten.(mm/hr)= 101.95 161.48
over (min) 5.00 10.00
Storage Coeff. (min)= 1.74 (ii) 7.57 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.13

PEAK FLOW (cms)= 0.01 0.08
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 82.29 62.58 64.54
TOTAL RAINFALL (mm)= 83.29 83.29 83.29
RUNOFF COEFFICIENT = 0.99 0.75 0.77

TOTALS

0.090 (iii)

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0401)
IN= 2---> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.090	12.25	64.54
OUTFLOW: ID= 1 (0401)	0.430	0.082	12.25	64.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 91.41
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.0010

CALIB
STANDHYD (0202) Area (ha)= 5.39
ID= 1 DT= 5.0 min Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.33	12.250	101.95	18.33	1.50
0.167	0.00	6.250	1.33	12.333	12.01	18.42	1.50
0.250	0.00	6.333	1.50	12.417	11.99	18.50	1.50
0.333	0.92	6.417	1.50	12.500	11.99	18.58	1.50
0.417	0.92	6.500	1.50	12.583	11.99	18.67	1.50
0.500	0.92	6.583	1.50	12.667	11.99	18.75	1.50
0.583	0.92	6.667	1.50	12.750	11.99	18.83	1.50
0.667	0.92	6.750	1.50	12.833	6.16	18.92	1.50
0.750	0.92	6.833	1.50	12.917	6.16	19.00	1.50
0.833	0.92	6.917	1.50	13.000	6.16	19.08	1.50
0.917	0.92	7.000	1.50	13.083	6.16	19.17	1.50
1.000	0.92	7.083	1.50	13.167	6.16	19.25	1.50
1.083	0.92	7.167	1.50	13.250	6.16	19.33	1.50
1.167	0.92	7.250	1.50	13.333	4.50	19.42	1.50
1.250	0.92	7.333	1.83	13.417	4.50	19.50	1.50
1.333	0.92	7.417	1.83	13.500	4.50	19.58	1.50
1.417	0.92	7.500	1.83	13.583	4.50	19.67	1.50
1.500	0.92	7.583	1.83	13.667	4.50	19.75	1.50
1.583	0.92	7.667	1.83	13.750	4.50	19.83	1.50
1.667	0.92	7.750	1.83	13.833	3.50	19.92	1.50
1.750	0.92	7.833	1.83	13.917	3.50	20.00	1.50
1.833	0.92	7.917	1.83	14.000	3.50	20.08	1.50
1.917	0.92	8.000	1.83	14.083	3.50	20.17	1.50
2.000	0.92	8.083	1.83	14.167	3.50	20.25	1.50
2.083	0.92	8.167	1.83	14.250	3.50	20.33	1.00
2.167	0.92	8.250	1.83	14.333	2.50	20.42	1.00
2.250	0.92	8.333	2.17	14.417	2.50	20.50	1.00
2.333	1.08	8.417	2.17	14.500	2.50	20.58	1.00
2.417	1.08	8.500	2.17	14.583	2.50	20.67	1.00
2.500	1.08	8.583	2.17	14.667	2.50	20.75	1.00
2.583	1.08	8.667	2.17	14.750	2.50	20.83	1.00

2.667	1.08	8.750	2.17	14.833	2.50	20.92	1.00
2.750	1.08	8.833	2.33	14.917	2.50	21.00	1.00
2.833	1.08	8.917	2.33	15.000	2.50	21.08	1.00
2.917	1.08	9.000	2.33	15.083	2.50	21.17	1.00
3.000	1.08	9.083	2.33	15.167	2.50	21.25	1.00
3.083	1.08	9.167	2.33	15.250	2.50	21.33	1.00
3.167	1.08	9.250	2.33	15.333	2.50	21.42	1.00
3.250	1.08	9.333	2.67	15.417	2.50	21.50	1.00
3.333	1.08	9.417	2.67	15.500	2.50	21.58	1.00
3.417	1.08	9.500	2.67	15.583	2.50	21.67	1.00
3.500	1.08	9.583	2.67	15.667	2.50	21.75	1.00
3.583	1.08	9.667	2.67	15.750	2.50	21.83	1.00
3.667	1.08	9.750	2.67	15.833	2.50	21.92	1.00
3.750	1.08	9.833	3.00	15.917	2.50	22.00	1.00
3.833	1.08	9.917	3.00	16.000	2.50	22.08	1.00
3.917	1.08	10.000	3.00	16.083	2.50	22.17	1.00
4.000	1.08	10.083	3.00	16.167	2.50	22.25	1.00
4.083	1.08	10.167	3.00	16.250	2.50	22.33	1.00
4.167	1.08	10.250	3.00	16.333	1.50	22.42	1.00
4.250	1.08	10.333	3.83	16.417	1.50	22.50	1.00
4.333	1.33	10.417	3.83	16.500	1.50	22.58	1.00
4.417	1.33	10.500	3.83	16.583	1.50	22.67	1.00
4.500	1.33	10.583	3.83	16.667	1.50	22.75	1.00
4.583	1.33	10.667	3.83	16.750	1.50	22.83	1.00
4.667	1.33	10.750	3.83	16.833	1.50	22.92	1.00
4.750	1.33	10.833	5.16	16.917	1.50	23.00	1.00
4.833	1.33	10.917	5.16	17.000	1.50	23.08	1.00
4.917	1.33	11.000	5.16	17.083	1.50	23.17	1.00
5.000	1.33	11.083	5.16	17.167	1.50	23.25	1.00
5.083	1.33	11.167	5.16	17.250	1.50	23.33	1.00
5.167	1.33	11.250	5.16	17.333	1.50	23.42	1.00
5.250	1.33	11.333	8.00	17.417	1.50	23.50	1.00
5.333	1.33	11.417	8.00	17.500	1.50	23.58	1.00
5.417	1.33	11.500	8.00	17.583	1.50	23.67	1.00
5.500	1.33	11.583	8.00	17.667	1.50	23.75	1.00
5.583	1.33	11.667	8.00	17.750	1.50	23.83	1.00
5.667	1.33	11.750	8.00	17.833	1.50	23.92	1.00
5.750	1.33	11.833	24.65	17.917	1.50	24.00	1.00
5.833	1.33	11.917	24.65	18.000	1.50	24.08	1.00
5.917	1.33	12.000	24.65	18.083	1.50	24.17	1.00
6.000	1.33	12.083	101.94	18.167	1.50	24.25	1.00
6.083	1.33	12.167	101.95	18.250	1.50		

Max. Eff. Inten. (mm/hr)= 101.95 102.89
over (min) 5.00 15.00
Storage Coeff. (min)= 3.72 (ii) 10.70 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.09

PEAK FLOW (cms)= 0.57 0.48 *TOTALS* 0.994 (iii)

TIME TO PEAK (hrs)= 12.25 12.33 12.25
RUNOFF VOLUME (mm)= 82.29 53.47 64.42
TOTAL RAINFALL (mm)= 83.29 83.29 83.29
RUNOFF COEFFICIENT = 0.99 0.64 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0201) | Area (ha)= 3.45
| ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.97 1.48
Dep. Storage (mm)= 1.00 3.39
Average Slope (%)= 1.00 2.00
Length (m)= 151.66 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.33	12.250	101.95	18.33	1.50
0.167	0.00	6.250	1.33	12.333	12.01	18.42	1.50
0.250	0.00	6.333	1.50	12.417	11.99	18.50	1.50
0.333	0.92	6.417	1.50	12.500	11.99	18.58	1.50
0.417	0.92	6.500	1.50	12.583	11.99	18.67	1.50
0.500	0.92	6.583	1.50	12.667	11.99	18.75	1.50
0.583	0.92	6.667	1.50	12.750	11.99	18.83	1.50
0.667	0.92	6.750	1.50	12.833	6.16	18.92	1.50
0.750	0.92	6.833	1.50	12.917	6.16	19.00	1.50
0.833	0.92	6.917	1.50	13.000	6.16	19.08	1.50
0.917	0.92	7.000	1.50	13.083	6.16	19.17	1.50
1.000	0.92	7.083	1.50	13.167	6.16	19.25	1.50
1.083	0.92	7.167	1.50	13.250	6.16	19.33	1.50
1.167	0.92	7.250	1.50	13.333	4.50	19.42	1.50
1.250	0.92	7.333	1.83	13.417	4.50	19.50	1.50
1.333	0.92	7.417	1.83	13.500	4.50	19.58	1.50
1.417	0.92	7.500	1.83	13.583	4.50	19.67	1.50
1.500	0.92	7.583	1.83	13.667	4.50	19.75	1.50

1.583	0.92	7.667	1.83	13.750	4.50	19.83	1.50
1.667	0.92	7.750	1.83	13.833	3.50	19.92	1.50
1.750	0.92	7.833	1.83	13.917	3.50	20.00	1.50
1.833	0.92	7.917	1.83	14.000	3.50	20.08	1.50
1.917	0.92	8.000	1.83	14.083	3.50	20.17	1.50
2.000	0.92	8.083	1.83	14.167	3.50	20.25	1.50
2.083	0.92	8.167	1.83	14.250	3.50	20.33	1.00
2.167	0.92	8.250	1.83	14.333	2.50	20.42	1.00
2.250	0.92	8.333	2.17	14.417	2.50	20.50	1.00
2.333	1.08	8.417	2.17	14.500	2.50	20.58	1.00
2.417	1.08	8.500	2.17	14.583	2.50	20.67	1.00
2.500	1.08	8.583	2.17	14.667	2.50	20.75	1.00
2.583	1.08	8.667	2.17	14.750	2.50	20.83	1.00
2.667	1.08	8.750	2.17	14.833	2.50	20.92	1.00
2.750	1.08	8.833	2.33	14.917	2.50	21.00	1.00
2.833	1.08	8.917	2.33	15.000	2.50	21.08	1.00
2.917	1.08	9.000	2.33	15.083	2.50	21.17	1.00
3.000	1.08	9.083	2.33	15.167	2.50	21.25	1.00
3.083	1.08	9.167	2.33	15.250	2.50	21.33	1.00
3.167	1.08	9.250	2.33	15.333	2.50	21.42	1.00
3.250	1.08	9.333	2.67	15.417	2.50	21.50	1.00
3.333	1.08	9.417	2.67	15.500	2.50	21.58	1.00
3.417	1.08	9.500	2.67	15.583	2.50	21.67	1.00
3.500	1.08	9.583	2.67	15.667	2.50	21.75	1.00
3.583	1.08	9.667	2.67	15.750	2.50	21.83	1.00
3.667	1.08	9.750	2.67	15.833	2.50	21.92	1.00
3.750	1.08	9.833	3.00	15.917	2.50	22.00	1.00
3.833	1.08	9.917	3.00	16.000	2.50	22.08	1.00
3.917	1.08	10.000	3.00	16.083	2.50	22.17	1.00
4.000	1.08	10.083	3.00	16.167	2.50	22.25	1.00
4.083	1.08	10.167	3.00	16.250	2.50	22.33	1.00
4.167	1.08	10.250	3.00	16.333	1.50	22.42	1.00
4.250	1.08	10.333	3.83	16.417	1.50	22.50	1.00
4.333	1.33	10.417	3.83	16.500	1.50	22.58	1.00
4.417	1.33	10.500	3.83	16.583	1.50	22.67	1.00
4.500	1.33	10.583	3.83	16.667	1.50	22.75	1.00
4.583	1.33	10.667	3.83	16.750	1.50	22.83	1.00
4.667	1.33	10.750	3.83	16.833	1.50	22.92	1.00
4.750	1.33	10.833	5.16	16.917	1.50	23.00	1.00
4.833	1.33	10.917	5.16	17.000	1.50	23.08	1.00
4.917	1.33	11.000	5.16	17.083	1.50	23.17	1.00
5.000	1.33	11.083	5.16	17.167	1.50	23.25	1.00
5.083	1.33	11.167	5.16	17.250	1.50	23.33	1.00
5.167	1.33	11.250	5.16	17.333	1.50	23.42	1.00
5.250	1.33	11.333	8.00	17.417	1.50	23.50	1.00
5.333	1.33	11.417	8.00	17.500	1.50	23.58	1.00
5.417	1.33	11.500	8.00	17.583	1.50	23.67	1.00
5.500	1.33	11.583	8.00	17.667	1.50	23.75	1.00
5.583	1.33	11.667	8.00	17.750	1.50	23.83	1.00
5.667	1.33	11.750	8.00	17.833	1.50	23.92	1.00

5.750	1.33	11.833	24.65	17.917	1.50	24.00	1.00
5.833	1.33	11.917	24.65	18.000	1.50	24.08	1.00
5.917	1.33	12.000	24.65	18.083	1.50	24.17	1.00
6.000	1.33	12.083	101.94	18.167	1.50	24.25	1.00
6.083	1.33	12.167	101.95	18.250	1.50		

Max.Eff.Inten.(mm/hr)=	101.95	103.17
over (min)	5.00	15.00
Storage Coeff. (min)=	3.25 (ii)	10.23 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.27	0.09

TOTALS			
PEAK FLOW (cms)=	0.50	0.29	0.768 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	82.29	64.90	73.94
TOTAL RAINFALL (mm)=	83.29	83.29	83.29
RUNOFF COEFFICIENT =	0.99	0.78	0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):	3.45	0.768	12.25	73.94
+ ID2= 2 (0202):	5.39	0.994	12.25	64.42
=====				
ID = 3 (0901):	8.84	1.761	12.25	68.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):	8.84	1.761	12.25	68.14
+ ID2= 2 (0401):	0.43	0.082	12.25	64.54
=====				
ID = 1 (0901):	9.27	1.844	12.25	67.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH
=====

V V I SSSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSSS UUUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-facf37fdee83\771
e5e75-1bc9-4197-9622-bc740fb14ed6\sc

Summary filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-facf37fdee83\771
e5e75-1bc9-4197-9622-bc740fb14ed6\sc

DATE: 12/05/2025

TIME: 02:32:41

USER:

COMMENTS: _____

** SIMULATION : Run 04 **

READ STORM

Ptotal= 98.13 mm

Filename: C:\Users\kbelanger\AppData\Local\Temp\
96eca046-ece6-4e0a-883e-8ece97edf8d5\086c3262
Comments: 25yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.77	12.50	14.13	18.75	1.77
0.25	1.08	6.50	1.77	12.75	7.26	19.00	1.77
0.50	1.08	6.75	1.77	13.00	7.26	19.25	1.77
0.75	1.08	7.00	1.77	13.25	5.30	19.50	1.77
1.00	1.08	7.25	2.16	13.50	5.30	19.75	1.77
1.25	1.08	7.50	2.16	13.75	4.12	20.00	1.77
1.50	1.08	7.75	2.16	14.00	4.12	20.25	1.18
1.75	1.08	8.00	2.16	14.25	2.94	20.50	1.18
2.00	1.08	8.25	2.55	14.50	2.94	20.75	1.18
2.25	1.28	8.50	2.55	14.75	2.94	21.00	1.18
2.50	1.28	8.75	2.75	15.00	2.94	21.25	1.18
2.75	1.28	9.00	2.75	15.25	2.94	21.50	1.18
3.00	1.28	9.25	3.14	15.50	2.94	21.75	1.18
3.25	1.28	9.50	3.14	15.75	2.94	22.00	1.18
3.50	1.28	9.75	3.53	16.00	2.94	22.25	1.18
3.75	1.28	10.00	3.53	16.25	1.77	22.50	1.18
4.00	1.28	10.25	4.51	16.50	1.77	22.75	1.18
4.25	1.57	10.50	4.51	16.75	1.77	23.00	1.18
4.50	1.57	10.75	6.08	17.00	1.77	23.25	1.18
4.75	1.57	11.00	6.08	17.25	1.77	23.50	1.18
5.00	1.57	11.25	9.42	17.50	1.77	23.75	1.18
5.25	1.57	11.50	9.42	17.75	1.77	24.00	1.18
5.50	1.57	11.75	29.05	18.00	1.77		
5.75	1.57	12.00	120.11	18.25	1.77		
6.00	1.57	12.25	14.13	18.50	1.77		

CALIB
STANDHYD (0203)
ID= 1 DT= 5.0 min

Area (ha)= 0.43
Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.57	12.250	120.11	18.33	1.77
0.167	0.00	6.250	1.57	12.333	14.14	18.42	1.77
0.250	0.00	6.333	1.77	12.417	14.13	18.50	1.77
0.333	1.08	6.417	1.77	12.500	14.13	18.58	1.77
0.417	1.08	6.500	1.77	12.583	14.13	18.67	1.77
0.500	1.08	6.583	1.77	12.667	14.13	18.75	1.77
0.583	1.08	6.667	1.77	12.750	14.13	18.83	1.77
0.667	1.08	6.750	1.77	12.833	7.26	18.92	1.77
0.750	1.08	6.833	1.77	12.917	7.26	19.00	1.77
0.833	1.08	6.917	1.77	13.000	7.26	19.08	1.77
0.917	1.08	7.000	1.77	13.083	7.26	19.17	1.77
1.000	1.08	7.083	1.77	13.167	7.26	19.25	1.77
1.083	1.08	7.167	1.77	13.250	7.26	19.33	1.77
1.167	1.08	7.250	1.77	13.333	5.30	19.42	1.77
1.250	1.08	7.333	2.16	13.417	5.30	19.50	1.77
1.333	1.08	7.417	2.16	13.500	5.30	19.58	1.77
1.417	1.08	7.500	2.16	13.583	5.30	19.67	1.77
1.500	1.08	7.583	2.16	13.667	5.30	19.75	1.77
1.583	1.08	7.667	2.16	13.750	5.30	19.83	1.77
1.667	1.08	7.750	2.16	13.833	4.12	19.92	1.77
1.750	1.08	7.833	2.16	13.917	4.12	20.00	1.77
1.833	1.08	7.917	2.16	14.000	4.12	20.08	1.77
1.917	1.08	8.000	2.16	14.083	4.12	20.17	1.77
2.000	1.08	8.083	2.16	14.167	4.12	20.25	1.77
2.083	1.08	8.167	2.16	14.250	4.12	20.33	1.18
2.167	1.08	8.250	2.16	14.333	2.94	20.42	1.18
2.250	1.08	8.333	2.55	14.417	2.94	20.50	1.18
2.333	1.28	8.417	2.55	14.500	2.94	20.58	1.18
2.417	1.28	8.500	2.55	14.583	2.94	20.67	1.18
2.500	1.28	8.583	2.55	14.667	2.94	20.75	1.18
2.583	1.28	8.667	2.55	14.750	2.94	20.83	1.18
2.667	1.28	8.750	2.55	14.833	2.94	20.92	1.18
2.750	1.28	8.833	2.75	14.917	2.94	21.00	1.18
2.833	1.28	8.917	2.75	15.000	2.94	21.08	1.18
2.917	1.28	9.000	2.75	15.083	2.94	21.17	1.18
3.000	1.28	9.083	2.75	15.167	2.94	21.25	1.18
3.083	1.28	9.167	2.75	15.250	2.94	21.33	1.18
3.167	1.28	9.250	2.75	15.333	2.94	21.42	1.18
3.250	1.28	9.333	3.14	15.417	2.94	21.50	1.18
3.333	1.28	9.417	3.14	15.500	2.94	21.58	1.18
3.417	1.28	9.500	3.14	15.583	2.94	21.67	1.18
3.500	1.28	9.583	3.14	15.667	2.94	21.75	1.18
3.583	1.28	9.667	3.14	15.750	2.94	21.83	1.18
3.667	1.28	9.750	3.14	15.833	2.94	21.92	1.18

3.750	1.28	9.833	3.53	15.917	2.94	22.00	1.18
3.833	1.28	9.917	3.53	16.000	2.94	22.08	1.18
3.917	1.28	10.000	3.53	16.083	2.94	22.17	1.18
4.000	1.28	10.083	3.53	16.167	2.94	22.25	1.18
4.083	1.28	10.167	3.53	16.250	2.94	22.33	1.18
4.167	1.28	10.250	3.53	16.333	1.77	22.42	1.18
4.250	1.28	10.333	4.51	16.417	1.77	22.50	1.18
4.333	1.57	10.417	4.51	16.500	1.77	22.58	1.18
4.417	1.57	10.500	4.51	16.583	1.77	22.67	1.18
4.500	1.57	10.583	4.51	16.667	1.77	22.75	1.18
4.583	1.57	10.667	4.51	16.750	1.77	22.83	1.18
4.667	1.57	10.750	4.51	16.833	1.77	22.92	1.18
4.750	1.57	10.833	6.08	16.917	1.77	23.00	1.18
4.833	1.57	10.917	6.08	17.000	1.77	23.08	1.18
4.917	1.57	11.000	6.08	17.083	1.77	23.17	1.18
5.000	1.57	11.083	6.08	17.167	1.77	23.25	1.18
5.083	1.57	11.167	6.08	17.250	1.77	23.33	1.18
5.167	1.57	11.250	6.08	17.333	1.77	23.42	1.18
5.250	1.57	11.333	9.42	17.417	1.77	23.50	1.18
5.333	1.57	11.417	9.42	17.500	1.77	23.58	1.18
5.417	1.57	11.500	9.42	17.583	1.77	23.67	1.18
5.500	1.57	11.583	9.42	17.667	1.77	23.75	1.18
5.583	1.57	11.667	9.42	17.750	1.77	23.83	1.18
5.667	1.57	11.750	9.42	17.833	1.77	23.92	1.18
5.750	1.57	11.833	29.04	17.917	1.77	24.00	1.18
5.833	1.57	11.917	29.05	18.000	1.77	24.08	1.18
5.917	1.57	12.000	29.05	18.083	1.77	24.17	1.18
6.000	1.57	12.083	120.10	18.167	1.77	24.25	1.18
6.083	1.57	12.167	120.11	18.250	1.77		
Max. Eff. Inten. (mm/hr)=				120.11	195.65		
over (min)				5.00	10.00		
Storage Coeff. (min)=				1.63 (ii)	7.03 (ii)		
Unit Hyd. Tpeak (min)=				5.00	10.00		
Unit Hyd. peak (cms)=				0.32	0.14		
				TOTALS			
PEAK FLOW (cms)=				0.01	0.10	0.112 (iii)	
TIME TO PEAK (hrs)=				12.25	12.25	12.25	
RUNOFF VOLUME (mm)=				97.13	76.78	78.80	
TOTAL RAINFALL (mm)=				98.13	98.13	98.13	
RUNOFF COEFFICIENT =				0.99	0.78	0.80	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
 YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 86.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.

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

 | RESERVOIR(0401) |
 | IN= 2---> OUT= 1 |
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.112	12.25	78.80
OUTFLOW: ID= 1 (0401)	0.430	0.096	12.33	78.80

PEAK FLOW REDUCTION [Qout/Qin](%)= 85.97
 TIME SHIFT OF PEAK FLOW (min)= 5.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0016

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

Area (ha)= 5.39
 Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.57	12.250	120.11	18.33	1.77
0.167	0.00	6.250	1.57	12.333	14.14	18.42	1.77
0.250	0.00	6.333	1.77	12.417	14.13	18.50	1.77
0.333	1.08	6.417	1.77	12.500	14.13	18.58	1.77
0.417	1.08	6.500	1.77	12.583	14.13	18.67	1.77
0.500	1.08	6.583	1.77	12.667	14.13	18.75	1.77
0.583	1.08	6.667	1.77	12.750	14.13	18.83	1.77
0.667	1.08	6.750	1.77	12.833	7.26	18.92	1.77
0.750	1.08	6.833	1.77	12.917	7.26	19.00	1.77
0.833	1.08	6.917	1.77	13.000	7.26	19.08	1.77

0.917	1.08	7.000	1.77	13.083	7.26	19.17	1.77
1.000	1.08	7.083	1.77	13.167	7.26	19.25	1.77
1.083	1.08	7.167	1.77	13.250	7.26	19.33	1.77
1.167	1.08	7.250	1.77	13.333	5.30	19.42	1.77
1.250	1.08	7.333	2.16	13.417	5.30	19.50	1.77
1.333	1.08	7.417	2.16	13.500	5.30	19.58	1.77
1.417	1.08	7.500	2.16	13.583	5.30	19.67	1.77
1.500	1.08	7.583	2.16	13.667	5.30	19.75	1.77
1.583	1.08	7.667	2.16	13.750	5.30	19.83	1.77
1.667	1.08	7.750	2.16	13.833	4.12	19.92	1.77
1.750	1.08	7.833	2.16	13.917	4.12	20.00	1.77
1.833	1.08	7.917	2.16	14.000	4.12	20.08	1.77
1.917	1.08	8.000	2.16	14.083	4.12	20.17	1.77
2.000	1.08	8.083	2.16	14.167	4.12	20.25	1.77
2.083	1.08	8.167	2.16	14.250	4.12	20.33	1.18
2.167	1.08	8.250	2.16	14.333	2.94	20.42	1.18
2.250	1.08	8.333	2.55	14.417	2.94	20.50	1.18
2.333	1.28	8.417	2.55	14.500	2.94	20.58	1.18
2.417	1.28	8.500	2.55	14.583	2.94	20.67	1.18
2.500	1.28	8.583	2.55	14.667	2.94	20.75	1.18
2.583	1.28	8.667	2.55	14.750	2.94	20.83	1.18
2.667	1.28	8.750	2.55	14.833	2.94	20.92	1.18
2.750	1.28	8.833	2.75	14.917	2.94	21.00	1.18
2.833	1.28	8.917	2.75	15.000	2.94	21.08	1.18
2.917	1.28	9.000	2.75	15.083	2.94	21.17	1.18
3.000	1.28	9.083	2.75	15.167	2.94	21.25	1.18
3.083	1.28	9.167	2.75	15.250	2.94	21.33	1.18
3.167	1.28	9.250	2.75	15.333	2.94	21.42	1.18
3.250	1.28	9.333	3.14	15.417	2.94	21.50	1.18
3.333	1.28	9.417	3.14	15.500	2.94	21.58	1.18
3.417	1.28	9.500	3.14	15.583	2.94	21.67	1.18
3.500	1.28	9.583	3.14	15.667	2.94	21.75	1.18
3.583	1.28	9.667	3.14	15.750	2.94	21.83	1.18
3.667	1.28	9.750	3.14	15.833	2.94	21.92	1.18
3.750	1.28	9.833	3.53	15.917	2.94	22.00	1.18
3.833	1.28	9.917	3.53	16.000	2.94	22.08	1.18
3.917	1.28	10.000	3.53	16.083	2.94	22.17	1.18
4.000	1.28	10.083	3.53	16.167	2.94	22.25	1.18
4.083	1.28	10.167	3.53	16.250	2.94	22.33	1.18
4.167	1.28	10.250	3.53	16.333	1.77	22.42	1.18
4.250	1.28	10.333	4.51	16.417	1.77	22.50	1.18
4.333	1.57	10.417	4.51	16.500	1.77	22.58	1.18
4.417	1.57	10.500	4.51	16.583	1.77	22.67	1.18
4.500	1.57	10.583	4.51	16.667	1.77	22.75	1.18
4.583	1.57	10.667	4.51	16.750	1.77	22.83	1.18
4.667	1.57	10.750	4.51	16.833	1.77	22.92	1.18
4.750	1.57	10.833	6.08	16.917	1.77	23.00	1.18
4.833	1.57	10.917	6.08	17.000	1.77	23.08	1.18
4.917	1.57	11.000	6.08	17.083	1.77	23.17	1.18
5.000	1.57	11.083	6.08	17.167	1.77	23.25	1.18

5.083	1.57	11.167	6.08	17.250	1.77	23.33	1.18
5.167	1.57	11.250	6.08	17.333	1.77	23.42	1.18
5.250	1.57	11.333	9.42	17.417	1.77	23.50	1.18
5.333	1.57	11.417	9.42	17.500	1.77	23.58	1.18
5.417	1.57	11.500	9.42	17.583	1.77	23.67	1.18
5.500	1.57	11.583	9.42	17.667	1.77	23.75	1.18
5.583	1.57	11.667	9.42	17.750	1.77	23.83	1.18
5.667	1.57	11.750	9.42	17.833	1.77	23.92	1.18
5.750	1.57	11.833	29.04	17.917	1.77	24.00	1.18
5.833	1.57	11.917	29.05	18.000	1.77	24.08	1.18
5.917	1.57	12.000	29.05	18.083	1.77	24.17	1.18
6.000	1.57	12.083	120.10	18.167	1.77	24.25	1.18
6.083	1.57	12.167	120.11	18.250	1.77		

Max.Eff.Inten.(mm/hr)= 120.11 127.50
over (min) 5.00 10.00
Storage Coeff. (min)= 3.48 (ii) 9.89 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.11

TOTALS

PEAK FLOW (cms)= 0.68 0.65 1.325 (iii)
TIME TO PEAK (hrs)= 12.25 12.25
RUNOFF VOLUME (mm)= 97.13 66.80 78.32
TOTAL RAINFALL (mm)= 98.13 98.13 98.13
RUNOFF COEFFICIENT = 0.99 0.68 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0201) | Area (ha)= 3.45
| ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.57	12.250	120.11	18.33	1.77
0.167	0.00	6.250	1.57	12.333	14.14	18.42	1.77
0.250	0.00	6.333	1.77	12.417	14.13	18.50	1.77
0.333	1.08	6.417	1.77	12.500	14.13	18.58	1.77
0.417	1.08	6.500	1.77	12.583	14.13	18.67	1.77
0.500	1.08	6.583	1.77	12.667	14.13	18.75	1.77
0.583	1.08	6.667	1.77	12.750	14.13	18.83	1.77
0.667	1.08	6.750	1.77	12.833	7.26	18.92	1.77
0.750	1.08	6.833	1.77	12.917	7.26	19.00	1.77
0.833	1.08	6.917	1.77	13.000	7.26	19.08	1.77
0.917	1.08	7.000	1.77	13.083	7.26	19.17	1.77
1.000	1.08	7.083	1.77	13.167	7.26	19.25	1.77
1.083	1.08	7.167	1.77	13.250	7.26	19.33	1.77
1.167	1.08	7.250	1.77	13.333	5.30	19.42	1.77
1.250	1.08	7.333	2.16	13.417	5.30	19.50	1.77
1.333	1.08	7.417	2.16	13.500	5.30	19.58	1.77
1.417	1.08	7.500	2.16	13.583	5.30	19.67	1.77
1.500	1.08	7.583	2.16	13.667	5.30	19.75	1.77
1.583	1.08	7.667	2.16	13.750	5.30	19.83	1.77
1.667	1.08	7.750	2.16	13.833	4.12	19.92	1.77
1.750	1.08	7.833	2.16	13.917	4.12	20.00	1.77
1.833	1.08	7.917	2.16	14.000	4.12	20.08	1.77
1.917	1.08	8.000	2.16	14.083	4.12	20.17	1.77
2.000	1.08	8.083	2.16	14.167	4.12	20.25	1.77
2.083	1.08	8.167	2.16	14.250	4.12	20.33	1.18
2.167	1.08	8.250	2.16	14.333	2.94	20.42	1.18
2.250	1.08	8.333	2.55	14.417	2.94	20.50	1.18
2.333	1.28	8.417	2.55	14.500	2.94	20.58	1.18
2.417	1.28	8.500	2.55	14.583	2.94	20.67	1.18
2.500	1.28	8.583	2.55	14.667	2.94	20.75	1.18
2.583	1.28	8.667	2.55	14.750	2.94	20.83	1.18
2.667	1.28	8.750	2.55	14.833	2.94	20.92	1.18
2.750	1.28	8.833	2.75	14.917	2.94	21.00	1.18
2.833	1.28	8.917	2.75	15.000	2.94	21.08	1.18
2.917	1.28	9.000	2.75	15.083	2.94	21.17	1.18
3.000	1.28	9.083	2.75	15.167	2.94	21.25	1.18
3.083	1.28	9.167	2.75	15.250	2.94	21.33	1.18
3.167	1.28	9.250	2.75	15.333	2.94	21.42	1.18
3.250	1.28	9.333	3.14	15.417	2.94	21.50	1.18
3.333	1.28	9.417	3.14	15.500	2.94	21.58	1.18
3.417	1.28	9.500	3.14	15.583	2.94	21.67	1.18
3.500	1.28	9.583	3.14	15.667	2.94	21.75	1.18
3.583	1.28	9.667	3.14	15.750	2.94	21.83	1.18
3.667	1.28	9.750	3.14	15.833	2.94	21.92	1.18
3.750	1.28	9.833	3.53	15.917	2.94	22.00	1.18
3.833	1.28	9.917	3.53	16.000	2.94	22.08	1.18
3.917	1.28	10.000	3.53	16.083	2.94	22.17	1.18

4.000	1.28	10.083	3.53	16.167	2.94	22.25	1.18
4.083	1.28	10.167	3.53	16.250	2.94	22.33	1.18
4.167	1.28	10.250	3.53	16.333	1.77	22.42	1.18
4.250	1.28	10.333	4.51	16.417	1.77	22.50	1.18
4.333	1.57	10.417	4.51	16.500	1.77	22.58	1.18
4.417	1.57	10.500	4.51	16.583	1.77	22.67	1.18
4.500	1.57	10.583	4.51	16.667	1.77	22.75	1.18
4.583	1.57	10.667	4.51	16.750	1.77	22.83	1.18
4.667	1.57	10.750	4.51	16.833	1.77	22.92	1.18
4.750	1.57	10.833	6.08	16.917	1.77	23.00	1.18
4.833	1.57	10.917	6.08	17.000	1.77	23.08	1.18
4.917	1.57	11.000	6.08	17.083	1.77	23.17	1.18
5.000	1.57	11.083	6.08	17.167	1.77	23.25	1.18
5.083	1.57	11.167	6.08	17.250	1.77	23.33	1.18
5.167	1.57	11.250	6.08	17.333	1.77	23.42	1.18
5.250	1.57	11.333	9.42	17.417	1.77	23.50	1.18
5.333	1.57	11.417	9.42	17.500	1.77	23.58	1.18
5.417	1.57	11.500	9.42	17.583	1.77	23.67	1.18
5.500	1.57	11.583	9.42	17.667	1.77	23.75	1.18
5.583	1.57	11.667	9.42	17.750	1.77	23.83	1.18
5.667	1.57	11.750	9.42	17.833	1.77	23.92	1.18
5.750	1.57	11.833	29.04	17.917	1.77	24.00	1.18
5.833	1.57	11.917	29.05	18.000	1.77	24.08	1.18
5.917	1.57	12.000	29.05	18.083	1.77	24.17	1.18
6.000	1.57	12.083	120.10	18.167	1.77	24.25	1.18
6.083	1.57	12.167	120.11	18.250	1.77		

Max. Eff. Inten. (mm/hr)= 120.11 124.30
over (min) 5.00 10.00
Storage Coeff. (min)= 3.05 (ii) 9.52 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.12

PEAK FLOW (cms)= 0.60 0.39
TIME TO PEAK (hrs)= 12.25 12.25
RUNOFF VOLUME (mm)= 97.13 79.27
TOTAL RAINFALL (mm)= 98.13 98.13
RUNOFF COEFFICIENT = 0.99 0.81

TOTALS
0.981 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):	3.45	0.981	12.25	88.56
+ ID2= 2 (0202):	5.39	1.325	12.25	78.32
=====				
ID = 3 (0901):	8.84	2.306	12.25	82.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):	8.84	2.306	12.25	82.32
+ ID2= 2 (0401):	0.43	0.096	12.33	78.80
=====				
ID = 1 (0901):	9.27	2.399	12.25	82.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\275
da4e1-e697-4ca7-b408-c1ff0968a69c\sc
Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\275

da4e1-e697-4ca7-b408-c1ff0968a69c\sc

5.75	1.75	12.00	133.81	18.25	1.97
6.00	1.75	12.25	15.74	18.50	1.97

DATE: 12/05/2025

TIME: 02:32:41

USER:

COMMENTS: _____

CALIB	Area (ha)=	0.43
STANDHYD (0203)	Total Imp(%)=	50.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n	=	0.013 0.250

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

 ** SIMULATION : Run 05 **

READ STORM	Filename: C:\Users\kbelanger\AppData\Local\Temp\96eca046-ece6-4e0a-883e-8ece97edf8d5\23ba3bec
Ptotal=109.32 mm	Comments: 50yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.97	12.50	15.74	18.75	1.97
0.25	1.20	6.50	1.97	12.75	8.09	19.00	1.97
0.50	1.20	6.75	1.97	13.00	8.09	19.25	1.97
0.75	1.20	7.00	1.97	13.25	5.90	19.50	1.97
1.00	1.20	7.25	2.41	13.50	5.90	19.75	1.97
1.25	1.20	7.50	2.41	13.75	4.59	20.00	1.97
1.50	1.20	7.75	2.41	14.00	4.59	20.25	1.31
1.75	1.20	8.00	2.41	14.25	3.28	20.50	1.31
2.00	1.20	8.25	2.84	14.50	3.28	20.75	1.31
2.25	1.42	8.50	2.84	14.75	3.28	21.00	1.31
2.50	1.42	8.75	3.06	15.00	3.28	21.25	1.31
2.75	1.42	9.00	3.06	15.25	3.28	21.50	1.31
3.00	1.42	9.25	3.50	15.50	3.28	21.75	1.31
3.25	1.42	9.50	3.50	15.75	3.28	22.00	1.31
3.50	1.42	9.75	3.94	16.00	3.28	22.25	1.31
3.75	1.42	10.00	3.94	16.25	1.97	22.50	1.31
4.00	1.42	10.25	5.03	16.50	1.97	22.75	1.31
4.25	1.75	10.50	5.03	16.75	1.97	23.00	1.31
4.50	1.75	10.75	6.78	17.00	1.97	23.25	1.31
4.75	1.75	11.00	6.78	17.25	1.97	23.50	1.31
5.00	1.75	11.25	10.49	17.50	1.97	23.75	1.31
5.25	1.75	11.50	10.49	17.75	1.97	24.00	1.31
5.50	1.75	11.75	32.36	18.00	1.97		

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.75	12.250	133.81	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.76	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.74	18.50	1.97
0.333	1.20	6.417	1.97	12.500	15.74	18.58	1.97
0.417	1.20	6.500	1.97	12.583	15.74	18.67	1.97
0.500	1.20	6.583	1.97	12.667	15.74	18.75	1.97
0.583	1.20	6.667	1.97	12.750	15.74	18.83	1.97
0.667	1.20	6.750	1.97	12.833	8.09	18.92	1.97
0.750	1.20	6.833	1.97	12.917	8.09	19.00	1.97
0.833	1.20	6.917	1.97	13.000	8.09	19.08	1.97
0.917	1.20	7.000	1.97	13.083	8.09	19.17	1.97
1.000	1.20	7.083	1.97	13.167	8.09	19.25	1.97
1.083	1.20	7.167	1.97	13.250	8.09	19.33	1.97
1.167	1.20	7.250	1.97	13.333	5.90	19.42	1.97
1.250	1.20	7.333	2.41	13.417	5.90	19.50	1.97
1.333	1.20	7.417	2.41	13.500	5.90	19.58	1.97
1.417	1.20	7.500	2.41	13.583	5.90	19.67	1.97
1.500	1.20	7.583	2.41	13.667	5.90	19.75	1.97
1.583	1.20	7.667	2.41	13.750	5.90	19.83	1.97
1.667	1.20	7.750	2.41	13.833	4.59	19.92	1.97
1.750	1.20	7.833	2.41	13.917	4.59	20.00	1.97
1.833	1.20	7.917	2.41	14.000	4.59	20.08	1.97
1.917	1.20	8.000	2.41	14.083	4.59	20.17	1.97
2.000	1.20	8.083	2.41	14.167	4.59	20.25	1.97
2.083	1.20	8.167	2.41	14.250	4.59	20.33	1.31
2.167	1.20	8.250	2.41	14.333	3.28	20.42	1.31
2.250	1.20	8.333	2.84	14.417	3.28	20.50	1.31

2.333	1.42	8.417	2.84	14.500	3.28	20.58	1.31
2.417	1.42	8.500	2.84	14.583	3.28	20.67	1.31
2.500	1.42	8.583	2.84	14.667	3.28	20.75	1.31
2.583	1.42	8.667	2.84	14.750	3.28	20.83	1.31
2.667	1.42	8.750	2.84	14.833	3.28	20.92	1.31
2.750	1.42	8.833	3.06	14.917	3.28	21.00	1.31
2.833	1.42	8.917	3.06	15.000	3.28	21.08	1.31
2.917	1.42	9.000	3.06	15.083	3.28	21.17	1.31
3.000	1.42	9.083	3.06	15.167	3.28	21.25	1.31
3.083	1.42	9.167	3.06	15.250	3.28	21.33	1.31
3.167	1.42	9.250	3.06	15.333	3.28	21.42	1.31
3.250	1.42	9.333	3.50	15.417	3.28	21.50	1.31
3.333	1.42	9.417	3.50	15.500	3.28	21.58	1.31
3.417	1.42	9.500	3.50	15.583	3.28	21.67	1.31
3.500	1.42	9.583	3.50	15.667	3.28	21.75	1.31
3.583	1.42	9.667	3.50	15.750	3.28	21.83	1.31
3.667	1.42	9.750	3.50	15.833	3.28	21.92	1.31
3.750	1.42	9.833	3.94	15.917	3.28	22.00	1.31
3.833	1.42	9.917	3.94	16.000	3.28	22.08	1.31
3.917	1.42	10.000	3.94	16.083	3.28	22.17	1.31
4.000	1.42	10.083	3.94	16.167	3.28	22.25	1.31
4.083	1.42	10.167	3.94	16.250	3.28	22.33	1.31
4.167	1.42	10.250	3.94	16.333	1.97	22.42	1.31
4.250	1.42	10.333	5.03	16.417	1.97	22.50	1.31
4.333	1.75	10.417	5.03	16.500	1.97	22.58	1.31
4.417	1.75	10.500	5.03	16.583	1.97	22.67	1.31
4.500	1.75	10.583	5.03	16.667	1.97	22.75	1.31
4.583	1.75	10.667	5.03	16.750	1.97	22.83	1.31
4.667	1.75	10.750	5.03	16.833	1.97	22.92	1.31
4.750	1.75	10.833	6.78	16.917	1.97	23.00	1.31
4.833	1.75	10.917	6.78	17.000	1.97	23.08	1.31
4.917	1.75	11.000	6.78	17.083	1.97	23.17	1.31
5.000	1.75	11.083	6.78	17.167	1.97	23.25	1.31
5.083	1.75	11.167	6.78	17.250	1.97	23.33	1.31
5.167	1.75	11.250	6.78	17.333	1.97	23.42	1.31
5.250	1.75	11.333	10.49	17.417	1.97	23.50	1.31
5.333	1.75	11.417	10.49	17.500	1.97	23.58	1.31
5.417	1.75	11.500	10.49	17.583	1.97	23.67	1.31
5.500	1.75	11.583	10.49	17.667	1.97	23.75	1.31
5.583	1.75	11.667	10.49	17.750	1.97	23.83	1.31
5.667	1.75	11.750	10.49	17.833	1.97	23.92	1.31
5.750	1.75	11.833	32.36	17.917	1.97	24.00	1.31
5.833	1.75	11.917	32.36	18.000	1.97	24.08	1.31
5.917	1.75	12.000	32.36	18.083	1.97	24.17	1.31
6.000	1.75	12.083	133.80	18.167	1.97	24.25	1.31
6.083	1.75	12.167	133.81	18.250	1.97		

Max. Eff. Inten. (mm/hr)= 133.81 221.33
over (min) 5.00 10.00
Storage Coeff. (min)= 1.56 (ii) 6.70 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.33 0.14
TOTALS
PEAK FLOW (cms)= 0.02 0.11 0.128 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 108.32 87.58 89.65
TOTAL RAINFALL (mm)= 109.32 109.32 109.32
RUNOFF COEFFICIENT = 0.99 0.80 0.82

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0401) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
DT= 5.0 min
OUTFLOW STORAGE OUTFLOW STORAGE
(cms) (ha.m.) (cms) (ha.m.)
0.0000 0.0000 | 0.1000 0.0017
0.0490 0.0004 | 0.1130 0.0026
0.0850 0.0009 | 0.1240 0.0033

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 (0203) 0.430 0.128 12.25 89.65
OUTFLOW: ID= 1 (0401) 0.430 0.105 12.33 89.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 81.96
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0021

| CALIB |
| STANDHYD (0202) | Area (ha)= 5.39
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.86 2.53
Dep. Storage (mm)= 1.00 3.40
Average Slope (%)= 1.00 2.00
Length (m)= 189.56 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.75	12.250	133.81	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.76	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.74	18.50	1.97
0.333	1.20	6.417	1.97	12.500	15.74	18.58	1.97
0.417	1.20	6.500	1.97	12.583	15.74	18.67	1.97
0.500	1.20	6.583	1.97	12.667	15.74	18.75	1.97
0.583	1.20	6.667	1.97	12.750	15.74	18.83	1.97
0.667	1.20	6.750	1.97	12.833	8.09	18.92	1.97
0.750	1.20	6.833	1.97	12.917	8.09	19.00	1.97
0.833	1.20	6.917	1.97	13.000	8.09	19.08	1.97
0.917	1.20	7.000	1.97	13.083	8.09	19.17	1.97
1.000	1.20	7.083	1.97	13.167	8.09	19.25	1.97
1.083	1.20	7.167	1.97	13.250	8.09	19.33	1.97
1.167	1.20	7.250	1.97	13.333	5.90	19.42	1.97
1.250	1.20	7.333	2.41	13.417	5.90	19.50	1.97
1.333	1.20	7.417	2.41	13.500	5.90	19.58	1.97
1.417	1.20	7.500	2.41	13.583	5.90	19.67	1.97
1.500	1.20	7.583	2.41	13.667	5.90	19.75	1.97
1.583	1.20	7.667	2.41	13.750	5.90	19.83	1.97
1.667	1.20	7.750	2.41	13.833	4.59	19.92	1.97
1.750	1.20	7.833	2.41	13.917	4.59	20.00	1.97
1.833	1.20	7.917	2.41	14.000	4.59	20.08	1.97
1.917	1.20	8.000	2.41	14.083	4.59	20.17	1.97
2.000	1.20	8.083	2.41	14.167	4.59	20.25	1.97
2.083	1.20	8.167	2.41	14.250	4.59	20.33	1.31
2.167	1.20	8.250	2.41	14.333	3.28	20.42	1.31
2.250	1.20	8.333	2.84	14.417	3.28	20.50	1.31
2.333	1.42	8.417	2.84	14.500	3.28	20.58	1.31
2.417	1.42	8.500	2.84	14.583	3.28	20.67	1.31
2.500	1.42	8.583	2.84	14.667	3.28	20.75	1.31
2.583	1.42	8.667	2.84	14.750	3.28	20.83	1.31
2.667	1.42	8.750	2.84	14.833	3.28	20.92	1.31
2.750	1.42	8.833	3.06	14.917	3.28	21.00	1.31
2.833	1.42	8.917	3.06	15.000	3.28	21.08	1.31
2.917	1.42	9.000	3.06	15.083	3.28	21.17	1.31
3.000	1.42	9.083	3.06	15.167	3.28	21.25	1.31
3.083	1.42	9.167	3.06	15.250	3.28	21.33	1.31
3.167	1.42	9.250	3.06	15.333	3.28	21.42	1.31
3.250	1.42	9.333	3.50	15.417	3.28	21.50	1.31
3.333	1.42	9.417	3.50	15.500	3.28	21.58	1.31
3.417	1.42	9.500	3.50	15.583	3.28	21.67	1.31
3.500	1.42	9.583	3.50	15.667	3.28	21.75	1.31
3.583	1.42	9.667	3.50	15.750	3.28	21.83	1.31

3.667	1.42	9.750	3.50	15.833	3.28	21.92	1.31
3.750	1.42	9.833	3.94	15.917	3.28	22.00	1.31
3.833	1.42	9.917	3.94	16.000	3.28	22.08	1.31
3.917	1.42	10.000	3.94	16.083	3.28	22.17	1.31
4.000	1.42	10.083	3.94	16.167	3.28	22.25	1.31
4.083	1.42	10.167	3.94	16.250	3.28	22.33	1.31
4.167	1.42	10.250	3.94	16.333	1.97	22.42	1.31
4.250	1.42	10.333	5.03	16.417	1.97	22.50	1.31
4.333	1.75	10.417	5.03	16.500	1.97	22.58	1.31
4.417	1.75	10.500	5.03	16.583	1.97	22.67	1.31
4.500	1.75	10.583	5.03	16.667	1.97	22.75	1.31
4.583	1.75	10.667	5.03	16.750	1.97	22.83	1.31
4.667	1.75	10.750	5.03	16.833	1.97	22.92	1.31
4.750	1.75	10.833	6.78	16.917	1.97	23.00	1.31
4.833	1.75	10.917	6.78	17.000	1.97	23.08	1.31
4.917	1.75	11.000	6.78	17.083	1.97	23.17	1.31
5.000	1.75	11.083	6.78	17.167	1.97	23.25	1.31
5.083	1.75	11.167	6.78	17.250	1.97	23.33	1.31
5.167	1.75	11.250	6.78	17.333	1.97	23.42	1.31
5.250	1.75	11.333	10.49	17.417	1.97	23.50	1.31
5.333	1.75	11.417	10.49	17.500	1.97	23.58	1.31
5.417	1.75	11.500	10.49	17.583	1.97	23.67	1.31
5.500	1.75	11.583	10.49	17.667	1.97	23.75	1.31
5.583	1.75	11.667	10.49	17.750	1.97	23.83	1.31
5.667	1.75	11.750	10.49	17.833	1.97	23.92	1.31
5.750	1.75	11.833	32.36	17.917	1.97	24.00	1.31
5.833	1.75	11.917	32.36	18.000	1.97	24.08	1.31
5.917	1.75	12.000	32.36	18.083	1.97	24.17	1.31
6.000	1.75	12.083	133.80	18.167	1.97	24.25	1.31
6.083	1.75	12.167	133.81	18.250	1.97		

Max.Eff.Inten.(mm/hr)=	133.81	146.21
over (min)	5.00	10.00
Storage Coeff. (min)=	3.34 (ii)	9.40 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.26	0.12

TOTALS		
PEAK FLOW (cms)=	0.75	0.76
TIME TO PEAK (hrs)=	12.25	12.25
		12.25
RUNOFF VOLUME (mm)=	108.32	77.05
		88.93
TOTAL RAINFALL (mm)=	109.32	109.32
RUNOFF COEFFICIENT =	0.99	0.70
		0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 CALIB
 STANDHYD (0201) Area (ha)= 3.45
 ID= 1 DT= 5.0 min Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.75	12.250	133.81	18.33	1.97
0.167	0.00	6.250	1.75	12.333	15.76	18.42	1.97
0.250	0.00	6.333	1.97	12.417	15.74	18.50	1.97
0.333	1.20	6.417	1.97	12.500	15.74	18.58	1.97
0.417	1.20	6.500	1.97	12.583	15.74	18.67	1.97
0.500	1.20	6.583	1.97	12.667	15.74	18.75	1.97
0.583	1.20	6.667	1.97	12.750	15.74	18.83	1.97
0.667	1.20	6.750	1.97	12.833	8.09	18.92	1.97
0.750	1.20	6.833	1.97	12.917	8.09	19.00	1.97
0.833	1.20	6.917	1.97	13.000	8.09	19.08	1.97
0.917	1.20	7.000	1.97	13.083	8.09	19.17	1.97
1.000	1.20	7.083	1.97	13.167	8.09	19.25	1.97
1.083	1.20	7.167	1.97	13.250	8.09	19.33	1.97
1.167	1.20	7.250	1.97	13.333	5.90	19.42	1.97
1.250	1.20	7.333	2.41	13.417	5.90	19.50	1.97
1.333	1.20	7.417	2.41	13.500	5.90	19.58	1.97
1.417	1.20	7.500	2.41	13.583	5.90	19.67	1.97
1.500	1.20	7.583	2.41	13.667	5.90	19.75	1.97
1.583	1.20	7.667	2.41	13.750	5.90	19.83	1.97
1.667	1.20	7.750	2.41	13.833	4.59	19.92	1.97
1.750	1.20	7.833	2.41	13.917	4.59	20.00	1.97
1.833	1.20	7.917	2.41	14.000	4.59	20.08	1.97
1.917	1.20	8.000	2.41	14.083	4.59	20.17	1.97
2.000	1.20	8.083	2.41	14.167	4.59	20.25	1.97
2.083	1.20	8.167	2.41	14.250	4.59	20.33	1.31
2.167	1.20	8.250	2.41	14.333	3.28	20.42	1.31
2.250	1.20	8.333	2.84	14.417	3.28	20.50	1.31
2.333	1.42	8.417	2.84	14.500	3.28	20.58	1.31
2.417	1.42	8.500	2.84	14.583	3.28	20.67	1.31
2.500	1.42	8.583	2.84	14.667	3.28	20.75	1.31

2.583	1.42	8.667	2.84	14.750	3.28	20.83	1.31
2.667	1.42	8.750	2.84	14.833	3.28	20.92	1.31
2.750	1.42	8.833	3.06	14.917	3.28	21.00	1.31
2.833	1.42	8.917	3.06	15.000	3.28	21.08	1.31
2.917	1.42	9.000	3.06	15.083	3.28	21.17	1.31
3.000	1.42	9.083	3.06	15.167	3.28	21.25	1.31
3.083	1.42	9.167	3.06	15.250	3.28	21.33	1.31
3.167	1.42	9.250	3.06	15.333	3.28	21.42	1.31
3.250	1.42	9.333	3.50	15.417	3.28	21.50	1.31
3.333	1.42	9.417	3.50	15.500	3.28	21.58	1.31
3.417	1.42	9.500	3.50	15.583	3.28	21.67	1.31
3.500	1.42	9.583	3.50	15.667	3.28	21.75	1.31
3.583	1.42	9.667	3.50	15.750	3.28	21.83	1.31
3.667	1.42	9.750	3.50	15.833	3.28	21.92	1.31
3.750	1.42	9.833	3.94	15.917	3.28	22.00	1.31
3.833	1.42	9.917	3.94	16.000	3.28	22.08	1.31
3.917	1.42	10.000	3.94	16.083	3.28	22.17	1.31
4.000	1.42	10.083	3.94	16.167	3.28	22.25	1.31
4.083	1.42	10.167	3.94	16.250	3.28	22.33	1.31
4.167	1.42	10.250	3.94	16.333	1.97	22.42	1.31
4.250	1.42	10.333	5.03	16.417	1.97	22.50	1.31
4.333	1.75	10.417	5.03	16.500	1.97	22.58	1.31
4.417	1.75	10.500	5.03	16.583	1.97	22.67	1.31
4.500	1.75	10.583	5.03	16.667	1.97	22.75	1.31
4.583	1.75	10.667	5.03	16.750	1.97	22.83	1.31
4.667	1.75	10.750	5.03	16.833	1.97	22.92	1.31
4.750	1.75	10.833	6.78	16.917	1.97	23.00	1.31
4.833	1.75	10.917	6.78	17.000	1.97	23.08	1.31
4.917	1.75	11.000	6.78	17.083	1.97	23.17	1.31
5.000	1.75	11.083	6.78	17.167	1.97	23.25	1.31
5.083	1.75	11.167	6.78	17.250	1.97	23.33	1.31
5.167	1.75	11.250	6.78	17.333	1.97	23.42	1.31
5.250	1.75	11.333	10.49	17.417	1.97	23.50	1.31
5.333	1.75	11.417	10.49	17.500	1.97	23.58	1.31
5.417	1.75	11.500	10.49	17.583	1.97	23.67	1.31
5.500	1.75	11.583	10.49	17.667	1.97	23.75	1.31
5.583	1.75	11.667	10.49	17.750	1.97	23.83	1.31
5.667	1.75	11.750	10.49	17.833	1.97	23.92	1.31
5.750	1.75	11.833	32.36	17.917	1.97	24.00	1.31
5.833	1.75	11.917	32.36	18.000	1.97	24.08	1.31
5.917	1.75	12.000	32.36	18.083	1.97	24.17	1.31
6.000	1.75	12.083	133.80	18.167	1.97	24.25	1.31
6.083	1.75	12.167	133.81	18.250	1.97		

Max. Eff. Inten. (mm/hr)= 133.81 140.16
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.92 (ii) 9.09 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.12

TOTALS

PEAK FLOW (cms)= 0.66 0.44 1.108 (iii)
 TIME TO PEAK (hrs)= 12.25 12.25 12.25
 RUNOFF VOLUME (mm)= 108.32 90.18 99.61
 TOTAL RAINFALL (mm)= 109.32 109.32 109.32
 RUNOFF COEFFICIENT = 0.99 0.82 0.91

O O T T H H Y M M O O
 000 T T H H Y M M 000
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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\816
 31561-11e7-4ce2-a5a8-83445fc87167\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\816
 31561-11e7-4ce2-a5a8-83445fc87167\sc

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0201):  3.45  1.108  12.25  99.61
+ ID2= 2 ( 0202):  5.39  1.518  12.25  88.93
=====
ID = 3 ( 0901):  8.84  2.626  12.25  93.10
  
```

DATE: 12/05/2025 TIME: 02:32:42

USER:

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

COMMENTS: _____

```

-----
| ADD HYD ( 0901) |
| 3 + 2 = 1 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  2.626  12.25  93.10
+ ID2= 2 ( 0401):  0.43  0.105  12.33  89.65
=====
ID = 1 ( 0901):  9.27  2.725  12.25  92.94
  
```

 ** SIMULATION : Run 06 **

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| READ STORM | Filename: C:\Users\kbelanger\AppData
|            |   ata\Local\Temp\
|            |   96eca046-ece6-4e0a-883e-8ece97edf8d5\1feaac38
| Ptotal=120.25 mm | Comments: 100yr 24hr 15min SCS Type II
-----
  
```

V V I SSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 W V I SSSS UUUU A A LLLLL
 000 TTTT TTTT H H Y Y M M 000 TM
 O O T T H H Y Y M M O O

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	2.16	12.50	17.32	18.75	2.16
0.25	1.32	6.50	2.16	12.75	8.90	19.00	2.16
0.50	1.32	6.75	2.16	13.00	8.90	19.25	2.16
0.75	1.32	7.00	2.16	13.25	6.49	19.50	2.16
1.00	1.32	7.25	2.65	13.50	6.49	19.75	2.16
1.25	1.32	7.50	2.65	13.75	5.05	20.00	2.16

1.50	1.32	7.75	2.65	14.00	5.05	20.25	1.44
1.75	1.32	8.00	2.65	14.25	3.61	20.50	1.44
2.00	1.32	8.25	3.13	14.50	3.61	20.75	1.44
2.25	1.56	8.50	3.13	14.75	3.61	21.00	1.44
2.50	1.56	8.75	3.37	15.00	3.61	21.25	1.44
2.75	1.56	9.00	3.37	15.25	3.61	21.50	1.44
3.00	1.56	9.25	3.85	15.50	3.61	21.75	1.44
3.25	1.56	9.50	3.85	15.75	3.61	22.00	1.44
3.50	1.56	9.75	4.33	16.00	3.61	22.25	1.44
3.75	1.56	10.00	4.33	16.25	2.16	22.50	1.44
4.00	1.56	10.25	5.53	16.50	2.16	22.75	1.44
4.25	1.92	10.50	5.53	16.75	2.16	23.00	1.44
4.50	1.92	10.75	7.46	17.00	2.16	23.25	1.44
4.75	1.92	11.00	7.46	17.25	2.16	23.50	1.44
5.00	1.92	11.25	11.54	17.50	2.16	23.75	1.44
5.25	1.92	11.50	11.54	17.75	2.16	24.00	1.44
5.50	1.92	11.75	35.59	18.00	2.16		
5.75	1.92	12.00	147.19	18.25	2.16		
6.00	1.92	12.25	17.32	18.50	2.16		

0.917	1.32	7.000	2.16	13.083	8.90	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.90	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.90	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.49	19.42	2.16
1.250	1.32	7.333	2.65	13.417	6.49	19.50	2.16
1.333	1.32	7.417	2.65	13.500	6.49	19.58	2.16
1.417	1.32	7.500	2.65	13.583	6.49	19.67	2.16
1.500	1.32	7.583	2.65	13.667	6.49	19.75	2.16
1.583	1.32	7.667	2.65	13.750	6.49	19.83	2.16
1.667	1.32	7.750	2.65	13.833	5.05	19.92	2.16
1.750	1.32	7.833	2.65	13.917	5.05	20.00	2.16
1.833	1.32	7.917	2.65	14.000	5.05	20.08	2.16
1.917	1.32	8.000	2.65	14.083	5.05	20.17	2.16
2.000	1.32	8.083	2.65	14.167	5.05	20.25	2.16
2.083	1.32	8.167	2.65	14.250	5.05	20.33	1.44
2.167	1.32	8.250	2.65	14.333	3.61	20.42	1.44
2.250	1.32	8.333	3.13	14.417	3.61	20.50	1.44
2.333	1.56	8.417	3.13	14.500	3.61	20.58	1.44
2.417	1.56	8.500	3.13	14.583	3.61	20.67	1.44
2.500	1.56	8.583	3.13	14.667	3.61	20.75	1.44
2.583	1.56	8.667	3.13	14.750	3.61	20.83	1.44
2.667	1.56	8.750	3.13	14.833	3.61	20.92	1.44
2.750	1.56	8.833	3.37	14.917	3.61	21.00	1.44
2.833	1.56	8.917	3.37	15.000	3.61	21.08	1.44
2.917	1.56	9.000	3.37	15.083	3.61	21.17	1.44
3.000	1.56	9.083	3.37	15.167	3.61	21.25	1.44
3.083	1.56	9.167	3.37	15.250	3.61	21.33	1.44
3.167	1.56	9.250	3.37	15.333	3.61	21.42	1.44
3.250	1.56	9.333	3.85	15.417	3.61	21.50	1.44
3.333	1.56	9.417	3.85	15.500	3.61	21.58	1.44
3.417	1.56	9.500	3.85	15.583	3.61	21.67	1.44
3.500	1.56	9.583	3.85	15.667	3.61	21.75	1.44
3.583	1.56	9.667	3.85	15.750	3.61	21.83	1.44
3.667	1.56	9.750	3.85	15.833	3.61	21.92	1.44
3.750	1.56	9.833	4.33	15.917	3.61	22.00	1.44
3.833	1.56	9.917	4.33	16.000	3.61	22.08	1.44
3.917	1.56	10.000	4.33	16.083	3.61	22.17	1.44
4.000	1.56	10.083	4.33	16.167	3.61	22.25	1.44
4.083	1.56	10.167	4.33	16.250	3.61	22.33	1.44
4.167	1.56	10.250	4.33	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.53	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.53	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.53	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.53	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.53	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.53	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.46	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.46	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.46	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.46	17.167	2.16	23.25	1.44

 | CALIB |
 | STANDHYD (0203) |
ID= 1 DT= 5.0 min

Area (ha)= 0.43
 Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	147.19	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.33	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.32	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.32	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.32	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.32	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.32	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.90	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.90	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.90	19.08	2.16

5.083	1.92	11.167	7.46	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.46	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.54	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.54	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.54	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.54	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.54	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.54	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.59	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.59	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.59	18.083	2.16	24.17	1.44
6.000	1.92	12.083	147.17	18.167	2.16	24.25	1.44
6.083	1.92	12.167	147.19	18.250	2.16		

PEAK FLOW REDUCTION [Qout/Qin](%)= 79.67
 TIME SHIFT OF PEAK FLOW (min)= 5.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0027

 CALIB
 STANDHYD (0202) | Area (ha)= 5.39
 ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.86	2.53
Dep. Storage	(mm)=	1.00	3.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	189.56	40.00
Mannings n	=	0.013	0.250

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

Max.Eff.Inten.(mm/hr)= 147.19 246.35
 over (min) 5.00 10.00
 Storage Coeff. (min)= 1.50 (ii) 6.43 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.33 0.14

TOTALS

PEAK FLOW (cms)= 0.02 0.13 0.144 (iii)
 TIME TO PEAK (hrs)= 12.25 12.25 12.25
 RUNOFF VOLUME (mm)= 119.25 98.19 100.29
 TOTAL RAINFALL (mm)= 120.25 120.25 120.25
 RUNOFF COEFFICIENT = 0.99 0.82 0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	147.19	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.33	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.32	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.32	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.32	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.32	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.32	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.90	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.90	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.90	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.90	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.90	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.90	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.49	19.42	2.16
1.250	1.32	7.333	2.65	13.417	6.49	19.50	2.16
1.333	1.32	7.417	2.65	13.500	6.49	19.58	2.16
1.417	1.32	7.500	2.65	13.583	6.49	19.67	2.16
1.500	1.32	7.583	2.65	13.667	6.49	19.75	2.16
1.583	1.32	7.667	2.65	13.750	6.49	19.83	2.16
1.667	1.32	7.750	2.65	13.833	5.05	19.92	2.16
1.750	1.32	7.833	2.65	13.917	5.05	20.00	2.16
1.833	1.32	7.917	2.65	14.000	5.05	20.08	2.16
1.917	1.32	8.000	2.65	14.083	5.05	20.17	2.16
2.000	1.32	8.083	2.65	14.167	5.05	20.25	2.16
2.083	1.32	8.167	2.65	14.250	5.05	20.33	1.44
2.167	1.32	8.250	2.65	14.333	3.61	20.42	1.44

 RESERVOIR(0401)
 IN= 2---> OUT= 1
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0203)	0.430	0.144	12.25	100.29
OUTFLOW: ID= 1 (0401)	0.430	0.115	12.33	100.29

2.250	1.32	8.333	3.13	14.417	3.61	20.50	1.44
2.333	1.56	8.417	3.13	14.500	3.61	20.58	1.44
2.417	1.56	8.500	3.13	14.583	3.61	20.67	1.44
2.500	1.56	8.583	3.13	14.667	3.61	20.75	1.44
2.583	1.56	8.667	3.13	14.750	3.61	20.83	1.44
2.667	1.56	8.750	3.13	14.833	3.61	20.92	1.44
2.750	1.56	8.833	3.37	14.917	3.61	21.00	1.44
2.833	1.56	8.917	3.37	15.000	3.61	21.08	1.44
2.917	1.56	9.000	3.37	15.083	3.61	21.17	1.44
3.000	1.56	9.083	3.37	15.167	3.61	21.25	1.44
3.083	1.56	9.167	3.37	15.250	3.61	21.33	1.44
3.167	1.56	9.250	3.37	15.333	3.61	21.42	1.44
3.250	1.56	9.333	3.85	15.417	3.61	21.50	1.44
3.333	1.56	9.417	3.85	15.500	3.61	21.58	1.44
3.417	1.56	9.500	3.85	15.583	3.61	21.67	1.44
3.500	1.56	9.583	3.85	15.667	3.61	21.75	1.44
3.583	1.56	9.667	3.85	15.750	3.61	21.83	1.44
3.667	1.56	9.750	3.85	15.833	3.61	21.92	1.44
3.750	1.56	9.833	4.33	15.917	3.61	22.00	1.44
3.833	1.56	9.917	4.33	16.000	3.61	22.08	1.44
3.917	1.56	10.000	4.33	16.083	3.61	22.17	1.44
4.000	1.56	10.083	4.33	16.167	3.61	22.25	1.44
4.083	1.56	10.167	4.33	16.250	3.61	22.33	1.44
4.167	1.56	10.250	4.33	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.53	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.53	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.53	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.53	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.53	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.53	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.46	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.46	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.46	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.46	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.46	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.46	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.54	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.54	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.54	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.54	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.54	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.54	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.59	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.59	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.59	18.083	2.16	24.17	1.44
6.000	1.92	12.083	147.17	18.167	2.16	24.25	1.44
6.083	1.92	12.167	147.19	18.250	2.16		

Max. Eff. Inten. (mm/hr)= 147.19 164.54
over (min) 5.00 10.00

Storage Coeff. (min)= 3.21 (ii) 9.00 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.12

TOTALS
PEAK FLOW (cms)= 0.83 0.88 1.708 (iii)
TIME TO PEAK (hrs)= 12.25 12.25 12.25
RUNOFF VOLUME (mm)= 119.25 87.20 99.38
TOTAL RAINFALL (mm)= 120.25 120.25 120.25
RUNOFF COEFFICIENT = 0.99 0.73 0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0201) | Area (ha)= 3.45
| ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.97	1.48
Dep. Storage	(mm)=	1.00	3.39
Average Slope	(%)=	1.00	2.00
Length	(m)=	151.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	147.19	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.33	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.32	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.32	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.32	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.32	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.32	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.90	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.90	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.90	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.90	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.90	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.90	19.33	2.16

1.167	1.32	7.250	2.16	13.333	6.49	19.42	2.16
1.250	1.32	7.333	2.65	13.417	6.49	19.50	2.16
1.333	1.32	7.417	2.65	13.500	6.49	19.58	2.16
1.417	1.32	7.500	2.65	13.583	6.49	19.67	2.16
1.500	1.32	7.583	2.65	13.667	6.49	19.75	2.16
1.583	1.32	7.667	2.65	13.750	6.49	19.83	2.16
1.667	1.32	7.750	2.65	13.833	5.05	19.92	2.16
1.750	1.32	7.833	2.65	13.917	5.05	20.00	2.16
1.833	1.32	7.917	2.65	14.000	5.05	20.08	2.16
1.917	1.32	8.000	2.65	14.083	5.05	20.17	2.16
2.000	1.32	8.083	2.65	14.167	5.05	20.25	2.16
2.083	1.32	8.167	2.65	14.250	5.05	20.33	1.44
2.167	1.32	8.250	2.65	14.333	3.61	20.42	1.44
2.250	1.32	8.333	3.13	14.417	3.61	20.50	1.44
2.333	1.56	8.417	3.13	14.500	3.61	20.58	1.44
2.417	1.56	8.500	3.13	14.583	3.61	20.67	1.44
2.500	1.56	8.583	3.13	14.667	3.61	20.75	1.44
2.583	1.56	8.667	3.13	14.750	3.61	20.83	1.44
2.667	1.56	8.750	3.13	14.833	3.61	20.92	1.44
2.750	1.56	8.833	3.37	14.917	3.61	21.00	1.44
2.833	1.56	8.917	3.37	15.000	3.61	21.08	1.44
2.917	1.56	9.000	3.37	15.083	3.61	21.17	1.44
3.000	1.56	9.083	3.37	15.167	3.61	21.25	1.44
3.083	1.56	9.167	3.37	15.250	3.61	21.33	1.44
3.167	1.56	9.250	3.37	15.333	3.61	21.42	1.44
3.250	1.56	9.333	3.85	15.417	3.61	21.50	1.44
3.333	1.56	9.417	3.85	15.500	3.61	21.58	1.44
3.417	1.56	9.500	3.85	15.583	3.61	21.67	1.44
3.500	1.56	9.583	3.85	15.667	3.61	21.75	1.44
3.583	1.56	9.667	3.85	15.750	3.61	21.83	1.44
3.667	1.56	9.750	3.85	15.833	3.61	21.92	1.44
3.750	1.56	9.833	4.33	15.917	3.61	22.00	1.44
3.833	1.56	9.917	4.33	16.000	3.61	22.08	1.44
3.917	1.56	10.000	4.33	16.083	3.61	22.17	1.44
4.000	1.56	10.083	4.33	16.167	3.61	22.25	1.44
4.083	1.56	10.167	4.33	16.250	3.61	22.33	1.44
4.167	1.56	10.250	4.33	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.53	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.53	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.53	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.53	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.53	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.53	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.46	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.46	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.46	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.46	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.46	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.46	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.54	17.417	2.16	23.50	1.44

5.333	1.92	11.417	11.54	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.54	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.54	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.54	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.54	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.59	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.59	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.59	18.083	2.16	24.17	1.44
6.000	1.92	12.083	147.17	18.167	2.16	24.25	1.44
6.083	1.92	12.167	147.19	18.250	2.16		

Max. Eff. Inten. (mm/hr)=	147.19	155.60
over (min)	5.00	10.00
Storage Coeff. (min)=	2.81 (ii)	8.72 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.12

TOTALS

PEAK FLOW (cms)=	0.73	0.50	1.232 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	119.25	100.88	110.43
TOTAL RAINFALL (mm)=	120.25	120.25	120.25
RUNOFF COEFFICIENT =	0.99	0.84	0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0201):	3.45	1.232	12.25	110.43
+ ID2= 2 (0202):	5.39	1.708	12.25	99.38
=====				
ID = 3 (0901):	8.84	2.940	12.25	103.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0901):	8.84	2.940	12.25	103.69

+ ID2= 2 (0401):	0.43	0.115	12.33	100.29
=====				
ID = 1 (0901):	9.27	3.047	12.25	103.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

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V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
WV I SSSS UUUU A A LLLLL
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000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y M M 000
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
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 ec542-0d4c-4941-bfb2-aa4d9ef9ce4a\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-fac37fdee83\15a
 ec542-0d4c-4941-bfb2-aa4d9ef9ce4a\sc

DATE: 12/05/2025

TIME: 02:22:23

USER:

COMMENTS: _____

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*****
** SIMULATION : Run 07 **
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| READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
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| d8952c79-96ed-4c0b-8238-70bfa00b6b7a\7b0acb1f
| Ptotal= 24.97 mm | Comments: 25 mm Chicago
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	1.29	1.00	2.81	2.00	13.05	3.00	2.04
0.10	1.36	1.10	3.22	2.10	8.44	3.10	1.89
0.20	1.44	1.20	3.77	2.20	6.21	3.20	1.76
0.30	1.53	1.30	4.55	2.30	4.91	3.30	1.65
0.40	1.63	1.40	5.77	2.40	4.06	3.40	1.55
0.50	1.75	1.50	7.86	2.50	3.47	3.50	1.46
0.60	1.89	1.60	12.27	2.60	3.03	3.60	1.39
0.70	2.06	1.70	26.17	2.70	2.70	3.70	1.32
0.80	2.26	1.80	72.58	2.80	2.43	3.80	1.26
0.90	2.50	1.90	26.96	2.90	2.22	3.90	1.20

```
-----
| CALIB |
| STANDHYD ( 0202) | Area (ha)= 5.39
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Max. Eff. Inten. (mm/hr)= 63.46 20.74

over (min) 5.00 20.00
 Storage Coeff. (min)= 4.50 (ii) 17.74 (ii)
 Unit Hyd. Tpeak (min)= 5.00 20.00
 Unit Hyd. peak (cms)= 0.23 0.06

TOTALS
 PEAK FLOW (cms)= 0.31 0.08 0.335 (iii)
 TIME TO PEAK (hrs)= 1.92 2.17 1.92
 RUNOFF VOLUME (mm)= 23.97 7.89 14.00
 TOTAL RAINFALL (mm)= 24.97 24.97 24.97
 RUNOFF COEFFICIENT = 0.96 0.32 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | CALIB |
 | STANDHYD (0203) | Area (ha)= 0.43
 | ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Max.Eff.Inten.(mm/hr)= 63.46 45.34
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.11 (ii) 11.79 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.31 0.09

TOTALS
 PEAK FLOW (cms)= 0.01 0.02 0.019 (iii)
 TIME TO PEAK (hrs)= 1.92 2.08 2.08
 RUNOFF VOLUME (mm)= 23.97 10.86 12.15
 TOTAL RAINFALL (mm)= 24.97 24.97 24.97
 RUNOFF COEFFICIENT = 0.96 0.43 0.49

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | RESERVOIR(0401) | OVERFLOW IS OFF
 | IN= 2---> OUT= 1 |
DT= 5.0 min

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0203)	0.430	0.019	2.08	12.15
OUTFLOW: ID= 1 (0401)	0.430	0.018	2.08	12.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 97.11
 TIME SHIFT OF PEAK FLOW (min)= 0.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0002

 | CALIB |
 | STANDHYD (0201) | Area (ha)= 3.45
 | ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48

Dep. Storage (mm)= 1.00 3.39
Average Slope (%)= 1.00 2.00
Length (m)= 151.66 40.00
Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	1.083	2.81	2.083	13.05	3.08	2.04
0.167	1.35	1.167	3.14	2.167	9.36	3.17	1.92
0.250	1.41	1.250	3.55	2.250	7.10	3.25	1.81
0.333	1.48	1.333	4.08	2.333	5.69	3.33	1.72
0.417	1.55	1.417	4.79	2.417	4.74	3.42	1.63
0.500	1.63	1.500	5.77	2.500	4.06	3.50	1.55
0.583	1.75	1.583	7.86	2.583	3.47	3.58	1.46
0.667	1.86	1.667	11.39	2.667	3.12	3.67	1.40
0.750	1.99	1.750	20.61	2.750	2.83	3.75	1.35
0.833	2.14	1.833	44.73	2.833	2.59	3.83	1.30
0.917	2.31	1.917	63.46	2.917	2.39	3.92	1.25
1.000	2.50	2.000	26.96	3.000	2.22	4.00	1.20

Max. Eff. Inten. (mm/hr)= 63.46 27.38
over (min) 5.00 20.00
Storage Coeff. (min)= 3.93 (ii) 15.78 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.24 0.07

PEAK FLOW (cms)= 0.28 0.07
TIME TO PEAK (hrs)= 1.92 2.17
RUNOFF VOLUME (mm)= 23.97 11.76
TOTAL RAINFALL (mm)= 24.97 24.97
RUNOFF COEFFICIENT = 0.96 0.47

TOTALS

0.302 (iii)
1.92
18.11
24.97
0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0901) |
1 + 2 = 3

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)

ID1= 1 (0201): 3.45 0.302 1.92 18.11
+ ID2= 2 (0202): 5.39 0.335 1.92 14.00
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0901) |
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 (0901): 8.84 0.637 1.92 15.60
+ ID2= 2 (0401): 0.43 0.018 2.08 12.15
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
W I SSSS UUUU A A LLLLL
000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat

Output filename:
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Summary filename:
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DATE: 12/05/2025

TIME: 02:22:22

USER:

COMMENTS: _____

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.63	1.083	12.44	2.083	5.20	3.08	3.03
0.167	2.63	1.167	12.44	2.167	5.20	3.17	3.03
0.250	2.94	1.250	72.08	2.250	4.59	3.25	2.85
0.333	2.94	1.333	72.08	2.333	4.59	3.33	2.85
0.417	3.35	1.417	15.26	2.417	4.13	3.42	2.70
0.500	3.35	1.500	15.26	2.500	4.13	3.50	2.70
0.583	3.95	1.583	9.62	2.583	3.77	3.58	2.56
0.667	3.95	1.667	9.62	2.667	3.77	3.67	2.56
0.750	4.89	1.750	7.34	2.750	3.48	3.75	2.44
0.833	4.89	1.833	7.34	2.833	3.48	3.83	2.44
0.917	6.69	1.917	6.05	2.917	3.23	3.92	2.34
1.000	6.69	2.000	6.05	3.000	3.23	4.00	2.34

 ** SIMULATION : Run 01 **

CHICAGO STORM
 Ptotal= 31.26 mm

IDF curve parameters: A= 360.408
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.63	1.00	12.44	2.00	5.20	3.00	3.03
0.17	2.94	1.17	72.08	2.17	4.59	3.17	2.85
0.33	3.35	1.33	15.26	2.33	4.13	3.33	2.70
0.50	3.95	1.50	9.62	2.50	3.77	3.50	2.56
0.67	4.89	1.67	7.34	2.67	3.48	3.67	2.44
0.83	6.69	1.83	6.05	2.83	3.23	3.83	2.34

Max.Eff.Inten.(mm/hr)= 72.08 24.34
 over (min) = 5.00 20.00
 Storage Coeff. (min)= 4.27 (ii) 16.69 (ii)
 Unit Hyd. Tpeak (min)= 5.00 20.00
 Unit Hyd. peak (cms)= 0.23 0.06

TOTALS
 PEAK FLOW (cms)= 0.38 0.10 0.411 (iii)
 TIME TO PEAK (hrs)= 1.33 1.58 1.33
 RUNOFF VOLUME (mm)= 30.26 11.78 18.80
 TOTAL RAINFALL (mm)= 31.26 31.26 31.26
 RUNOFF COEFFICIENT = 0.97 0.38 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

Area (ha)= 5.39
 Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

CALIB
 STANDHYD (0203)
 ID= 1 DT= 5.0 min

Area (ha)= 0.43
 Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

0.0850 0.0009 | 0.1240 0.0033

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.63	1.083	12.44	2.083	5.20	3.08	3.03
0.167	2.63	1.167	12.44	2.167	5.20	3.17	3.03
0.250	2.94	1.250	72.08	2.250	4.59	3.25	2.85
0.333	2.94	1.333	72.08	2.333	4.59	3.33	2.85
0.417	3.35	1.417	15.26	2.417	4.13	3.42	2.70
0.500	3.35	1.500	15.26	2.500	4.13	3.50	2.70
0.583	3.95	1.583	9.62	2.583	3.77	3.58	2.56
0.667	3.95	1.667	9.62	2.667	3.77	3.67	2.56
0.750	4.89	1.750	7.34	2.750	3.48	3.75	2.44
0.833	4.89	1.833	7.34	2.833	3.48	3.83	2.44
0.917	6.69	1.917	6.05	2.917	3.23	3.92	2.34
1.000	6.69	2.000	6.05	3.000	3.23	4.00	2.34

Max.Eff.Inten.(mm/hr)= 72.08 61.67
over (min) 5.00 15.00
Storage Coeff. (min)= 2.00 (ii) 10.56 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.01 0.02 0.022 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.50
RUNOFF VOLUME (mm)= 30.26 15.71 17.15
TOTAL RAINFALL (mm)= 31.26 31.26 31.26
RUNOFF COEFFICIENT = 0.97 0.50 0.55

TOTALS

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0401)
IN= 2---> OUT= 1
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.022	1.50	17.15
OUTFLOW: ID= 1 (0401)	0.430	0.022	1.50	17.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.37
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.0002

CALIB
STANDHYD (0201) Area (ha)= 3.45
ID= 1 DT= 5.0 min Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.63	1.083	12.44	2.083	5.20	3.08	3.03
0.167	2.63	1.167	12.44	2.167	5.20	3.17	3.03
0.250	2.94	1.250	72.08	2.250	4.59	3.25	2.85
0.333	2.94	1.333	72.08	2.333	4.59	3.33	2.85
0.417	3.35	1.417	15.26	2.417	4.13	3.42	2.70
0.500	3.35	1.500	15.26	2.500	4.13	3.50	2.70
0.583	3.95	1.583	9.62	2.583	3.77	3.58	2.56
0.667	3.95	1.667	9.62	2.667	3.77	3.67	2.56
0.750	4.89	1.750	7.34	2.750	3.48	3.75	2.44
0.833	4.89	1.833	7.34	2.833	3.48	3.83	2.44
0.917	6.69	1.917	6.05	2.917	3.23	3.92	2.34
1.000	6.69	2.000	6.05	3.000	3.23	4.00	2.34

Max.Eff.Inten.(mm/hr)= 72.08 41.98
over (min) 5.00 15.00
Storage Coeff. (min)= 3.74 (ii) 13.73 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.08

PEAK FLOW (cms)= 0.34 0.08 *TOTALS* 0.381 (iii)

TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 30.26 16.87 23.83
 TOTAL RAINFALL (mm)= 31.26 31.26 31.26
 RUNOFF COEFFICIENT = 0.97 0.54 0.76

000 T T H H Y M M 000
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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. 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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 ac19a-0ea7-42db-a3b5-072c76426fa1\sc

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0201):  3.45  0.381  1.33  23.83
+ ID2= 2 ( 0202):  5.39  0.411  1.33  18.80
=====
      ID = 3 ( 0901):  8.84  0.792  1.33  20.76
  
```

DATE: 12/05/2025 TIME: 02:22:22

USER:

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

COMMENTS: _____

```

-----
| ADD HYD ( 0901) |
| 3 + 2 = 1 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  0.792  1.33  20.76
+ ID2= 2 ( 0401):  0.43  0.022  1.50  17.15
=====
      ID = 1 ( 0901):  9.27  0.809  1.33  20.59
  
```

 ** SIMULATION : Run 02 **

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CHICAGO STORM |
| Ptotal= 41.72 mm |
-----

```

IDF curve parameters: A= 481.128
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.51	1.00	16.60	2.00	6.94	3.00	4.04
0.17	3.92	1.17	96.22	2.17	6.13	3.17	3.81
0.33	4.47	1.33	20.37	2.33	5.51	3.33	3.60
0.50	5.27	1.50	12.85	2.50	5.03	3.50	3.42

```

=====
V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLL

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

0.67	6.53	1.67	9.80	2.67	4.64	3.67	3.26
0.83	8.93	1.83	8.07	2.83	4.32	3.83	3.12

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB
| STANDHYD ( 0202) | Area (ha)= 5.39
| ID= 1 DT= 5.0 min | Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.51	1.083	16.60	2.083	6.94	3.08	4.04
0.167	3.51	1.167	16.60	2.167	6.94	3.17	4.04
0.250	3.92	1.250	96.22	2.250	6.13	3.25	3.81
0.333	3.92	1.333	96.22	2.333	6.13	3.33	3.81
0.417	4.47	1.417	20.37	2.417	5.51	3.42	3.60
0.500	4.47	1.500	20.37	2.500	5.51	3.50	3.60
0.583	5.27	1.583	12.85	2.583	5.03	3.58	3.42
0.667	5.27	1.667	12.85	2.667	5.03	3.67	3.42
0.750	6.53	1.750	9.80	2.750	4.64	3.75	3.26
0.833	6.53	1.833	9.80	2.833	4.64	3.83	3.26
0.917	8.93	1.917	8.07	2.917	4.32	3.92	3.12
1.000	8.93	2.000	8.07	3.000	4.32	4.00	3.12

Max.Eff.Inten.(mm/hr)=	96.22	53.80
over (min)	5.00	15.00
Storage Coeff. (min)=	3.81 (ii)	12.85 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.25	0.08

TOTALS

PEAK FLOW (cms)=	0.51	0.19	0.614 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	40.72	19.09	27.31
TOTAL RAINFALL (mm)=	41.72	41.72	41.72
RUNOFF COEFFICIENT =	0.98	0.46	0.65

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

```

-----
| CALIB
| STANDHYD ( 0203) | Area (ha)= 0.43
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.51	1.083	16.60	2.083	6.94	3.08	4.04
0.167	3.51	1.167	16.60	2.167	6.94	3.17	4.04
0.250	3.92	1.250	96.22	2.250	6.13	3.25	3.81
0.333	3.92	1.333	96.22	2.333	6.13	3.33	3.81
0.417	4.47	1.417	20.37	2.417	5.51	3.42	3.60
0.500	4.47	1.500	20.37	2.500	5.51	3.50	3.60
0.583	5.27	1.583	12.85	2.583	5.03	3.58	3.42
0.667	5.27	1.667	12.85	2.667	5.03	3.67	3.42
0.750	6.53	1.750	9.80	2.750	4.64	3.75	3.26
0.833	6.53	1.833	9.80	2.833	4.64	3.83	3.26
0.917	8.93	1.917	8.07	2.917	4.32	3.92	3.12
1.000	8.93	2.000	8.07	3.000	4.32	4.00	3.12

Max.Eff.Inten.(mm/hr)=	96.22	100.49
over (min)	5.00	10.00
Storage Coeff. (min)=	1.78 (ii)	8.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.32	0.12

TOTALS

PEAK FLOW (cms)=	0.01	0.04	0.044 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	40.72	24.44	26.06
TOTAL RAINFALL (mm)=	41.72	41.72	41.72
RUNOFF COEFFICIENT =	0.98	0.59	0.62


```

-----
              (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  1.154  1.33  29.78
+ ID2= 2 ( 0401):  0.43  0.044  1.42  26.06
=====
ID = 1 ( 0901):  9.27  1.192  1.33  29.61

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2019)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
W  I  SSSSS  UUUUU  A  A  LLLLL

```

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000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

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

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

Output filename:
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 9cacc-1fe5-4ddc-b8a4-3941e59fc5e9\sc
 Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\F0BF8B14-D4AA-429F-ADE8-FACF37FDEE83\55d
 9cacc-1fe5-4ddc-b8a4-3941e59fc5e9\sc

DATE: 12/05/2025

TIME: 02:22:22

USER:

COMMENTS: _____

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

```

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-----
| CHICAGO STORM |
| Ptotal= 48.55 mm |
-----

```

IDF curve parameters: A= 559.858
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.08	1.00	19.32	2.00	8.07	3.00	4.70
0.17	4.56	1.17	111.96	2.17	7.13	3.17	4.43
0.33	5.21	1.33	23.71	2.33	6.42	3.33	4.19
0.50	6.13	1.50	14.95	2.50	5.85	3.50	3.98
0.67	7.59	1.67	11.40	2.67	5.40	3.67	3.80
0.83	10.39	1.83	9.39	2.83	5.02	3.83	3.63

```

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

```

Area (ha)= 5.39
 Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

```

-----
-----

```

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.08	1.083	19.32	2.083	8.07	3.08	4.70
0.167	4.08	1.167	19.32	2.167	8.07	3.17	4.70
0.250	4.56	1.250	111.96	2.250	7.13	3.25	4.43
0.333	4.56	1.333	111.96	2.333	7.13	3.33	4.43
0.417	5.21	1.417	23.71	2.417	6.42	3.42	4.19
0.500	5.21	1.500	23.71	2.500	6.42	3.50	4.19
0.583	6.13	1.583	14.95	2.583	5.85	3.58	3.98

0.667	6.13	1.667	14.95	2.667	5.85	3.67	3.98
0.750	7.59	1.750	11.40	2.750	5.40	3.75	3.80
0.833	7.59	1.833	11.40	2.833	5.40	3.83	3.80
0.917	10.39	1.917	9.39	2.917	5.02	3.92	3.63
1.000	10.39	2.000	9.39	3.000	5.02	4.00	3.63

Max.Eff.Inten.(mm/hr)= 111.96 69.89
over (min) 5.00 15.00
Storage Coeff. (min)= 3.58 (ii) 11.73 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.26 0.09

TOTALS
PEAK FLOW (cms)= 0.60 0.26 0.743 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 47.55 24.27 33.11
TOTAL RAINFALL (mm)= 48.55 48.55
RUNOFF COEFFICIENT = 0.98 0.50 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0203) | Area (ha)= 0.43
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.08	1.083	19.32	2.083	8.07	3.08	4.70
0.167	4.08	1.167	19.32	2.167	8.07	3.17	4.70
0.250	4.56	1.250	111.96	2.250	7.13	3.25	4.43
0.333	4.56	1.333	111.96	2.333	7.13	3.33	4.43
0.417	5.21	1.417	23.71	2.417	6.42	3.42	4.19

0.500	5.21	1.500	23.71	2.500	6.42	3.50	4.19
0.583	6.13	1.583	14.95	2.583	5.85	3.58	3.98
0.667	6.13	1.667	14.95	2.667	5.85	3.67	3.98
0.750	7.59	1.750	11.40	2.750	5.40	3.75	3.80
0.833	7.59	1.833	11.40	2.833	5.40	3.83	3.80
0.917	10.39	1.917	9.39	2.917	5.02	3.92	3.63
1.000	10.39	2.000	9.39	3.000	5.02	4.00	3.63

Max.Eff.Inten.(mm/hr)= 111.96 127.39
over (min) 5.00 10.00
Storage Coeff. (min)= 1.68 (ii) 8.08 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.13

TOTALS
PEAK FLOW (cms)= 0.01 0.05 0.057 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 47.55 30.42 32.12
TOTAL RAINFALL (mm)= 48.55 48.55 48.55
RUNOFF COEFFICIENT = 0.98 0.63 0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0401) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.057	1.33	32.12
OUTFLOW: ID= 1 (0401)	0.430	0.056	1.42	32.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 98.26
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0005

```

-----
| CALIB |
| STANDHYD ( 0201) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 3.45
Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

```

```

          IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 1.97 1.48
Dep. Storage (mm)= 1.00 3.39
Average Slope (%)= 1.00 2.00
Length (m)= 151.66 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.08 | 1.083 19.32 | 2.083 8.07 | 3.08 4.70
0.167 4.08 | 1.167 19.32 | 2.167 8.07 | 3.17 4.70
0.250 4.56 | 1.250 111.96 | 2.250 7.13 | 3.25 4.43
0.333 4.56 | 1.333 111.96 | 2.333 7.13 | 3.33 4.43
0.417 5.21 | 1.417 23.71 | 2.417 6.42 | 3.42 4.19
0.500 5.21 | 1.500 23.71 | 2.500 6.42 | 3.50 4.19
0.583 6.13 | 1.583 14.95 | 2.583 5.85 | 3.58 3.98
0.667 6.13 | 1.667 14.95 | 2.667 5.85 | 3.67 3.98
0.750 7.59 | 1.750 11.40 | 2.750 5.40 | 3.75 3.80
0.833 7.59 | 1.833 11.40 | 2.833 5.40 | 3.83 3.80
0.917 10.39 | 1.917 9.39 | 2.917 5.02 | 3.92 3.63
1.000 10.39 | 2.000 9.39 | 3.000 5.02 | 4.00 3.63

```

```

Max.Eff.Inten.(mm/hr)= 111.96 84.97
over (min) 5.00 15.00
Storage Coeff. (min)= 3.13 (ii) 10.67 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.09

```

```

*TOTALS*
0.647 (iii)
40.14
48.55
0.83

```

```

PEAK FLOW (cms)= 0.54 0.19
TIME TO PEAK (hrs)= 1.33 1.50
RUNOFF VOLUME (mm)= 47.55 32.12
TOTAL RAINFALL (mm)= 48.55 48.55
RUNOFF COEFFICIENT = 0.98 0.66

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----

```

```

          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0201): 3.45 0.647 1.33 40.14
+ ID2= 2 ( 0202): 5.39 0.743 1.33 33.11
=====
ID = 3 ( 0901): 8.84 1.390 1.33 35.86

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0901) |
| 3 + 2 = 1 |
-----

```

```

          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901): 8.84 1.390 1.33 35.86
+ ID2= 2 ( 0401): 0.43 0.056 1.42 32.12
=====
ID = 1 ( 0901): 9.27 1.439 1.33 35.68

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

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000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voindat

Output filename:

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Dep. Storage (mm)= 1.00 3.40
 Average Slope (%)= 1.00 2.00
 Length (m)= 189.56 40.00
 Mannings n = 0.013 0.250

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

DATE: 12/05/2025 TIME: 02:22:22

USER:

COMMENTS: _____

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.81	1.083	22.76	2.083	9.51	3.08	5.54
0.167	4.81	1.167	22.76	2.167	9.51	3.17	5.54
0.250	5.37	1.250	131.91	2.250	8.40	3.25	5.22
0.333	5.37	1.333	131.91	2.333	8.40	3.33	5.22
0.417	6.13	1.417	27.93	2.417	7.56	3.42	4.94
0.500	6.13	1.500	27.93	2.500	7.56	3.50	4.94
0.583	7.22	1.583	17.61	2.583	6.90	3.58	4.69
0.667	7.22	1.667	17.61	2.667	6.90	3.67	4.69
0.750	8.95	1.750	13.43	2.750	6.36	3.75	4.47
0.833	8.95	1.833	13.43	2.833	6.36	3.83	4.47
0.917	12.24	1.917	11.06	2.917	5.92	3.92	4.28
1.000	12.24	2.000	11.06	3.000	5.92	4.00	4.28

 ** SIMULATION : Run 04 **

CHICAGO STORM
 Ptotal= 57.20 mm

IDF curve parameters: A= 659.582
 B= 0.000
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.81	1.00	22.76	2.00	9.51	3.00	5.54
0.17	5.37	1.17	131.91	2.17	8.40	3.17	5.22
0.33	6.13	1.33	27.93	2.33	7.56	3.33	4.94
0.50	7.22	1.50	17.61	2.50	6.90	3.50	4.69
0.67	8.95	1.67	13.43	2.67	6.36	3.67	4.47
0.83	12.24	1.83	11.06	2.83	5.92	3.83	4.28

Max. Eff. Inten. (mm/hr)= 131.91 91.67
 over (min) = 5.00 15.00
 Storage Coeff. (min)= 3.36 (ii) 10.66 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.26 0.09

TOTALS

PEAK FLOW (cms)= 0.72 0.36 0.914 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 56.20 31.16 40.68
 TOTAL RAINFALL (mm)= 57.20 57.20 57.20
 RUNOFF COEFFICIENT = 0.98 0.54 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

Area (ha)= 5.39
 Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

Surface Area (ha)= IMPERVIOUS 2.86 PERVIOUS (i) 2.53

CALIB
 STANDHYD (0203)
 ID= 1 DT= 5.0 min

Area (ha)= 0.43
 Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.22 0.22
 Dep. Storage (mm)= 1.00 5.12
 Average Slope (%)= 1.00 2.00
 Length (m)= 53.54 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.81	1.083	22.76	2.083	9.51	3.08	5.54
0.167	4.81	1.167	22.76	2.167	9.51	3.17	5.54
0.250	5.37	1.250	131.91	2.250	8.40	3.25	5.22
0.333	5.37	1.333	131.91	2.333	8.40	3.33	5.22
0.417	6.13	1.417	27.93	2.417	7.56	3.42	4.94
0.500	6.13	1.500	27.93	2.500	7.56	3.50	4.94
0.583	7.22	1.583	17.61	2.583	6.90	3.58	4.69
0.667	7.22	1.667	17.61	2.667	6.90	3.67	4.69
0.750	8.95	1.750	13.43	2.750	6.36	3.75	4.47
0.833	8.95	1.833	13.43	2.833	6.36	3.83	4.47
0.917	12.24	1.917	11.06	2.917	5.92	3.92	4.28
1.000	12.24	2.000	11.06	3.000	5.92	4.00	4.28

Max. Eff. Inten. (mm/hr)= 131.91 162.59
 over (min) = 5.00 10.00
 Storage Coeff. (min)= 1.57 (ii) 7.38 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.33 0.13

TOTALS
 PEAK FLOW (cms)= 0.02 0.07 0.074 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 56.20 38.21 40.00
 TOTAL RAINFALL (mm)= 57.20 57.20 57.20
 RUNOFF COEFFICIENT = 0.98 0.67 0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0401)
 IN= 2---> OUT= 1
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0203)	0.430	0.074	1.33	40.00
OUTFLOW: ID= 1 (0401)	0.430	0.073	1.42	40.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 98.02
 TIME SHIFT OF PEAK FLOW (min)= 5.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0008

CALIB
 STANDHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 1.97 1.48
 Dep. Storage (mm)= 1.00 3.39
 Average Slope (%)= 1.00 2.00
 Length (m)= 151.66 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.81	1.083	22.76	2.083	9.51	3.08	5.54
0.167	4.81	1.167	22.76	2.167	9.51	3.17	5.54
0.250	5.37	1.250	131.91	2.250	8.40	3.25	5.22
0.333	5.37	1.333	131.91	2.333	8.40	3.33	5.22
0.417	6.13	1.417	27.93	2.417	7.56	3.42	4.94
0.500	6.13	1.500	27.93	2.500	7.56	3.50	4.94
0.583	7.22	1.583	17.61	2.583	6.90	3.58	4.69
0.667	7.22	1.667	17.61	2.667	6.90	3.67	4.69
0.750	8.95	1.750	13.43	2.750	6.36	3.75	4.47
0.833	8.95	1.833	13.43	2.833	6.36	3.83	4.47
0.917	12.24	1.917	11.06	2.917	5.92	3.92	4.28
1.000	12.24	2.000	11.06	3.000	5.92	4.00	4.28

Max. Eff. Inten. (mm/hr)= 131.91 107.57

```

over (min)          5.00      10.00
Storage Coeff. (min)= 2.94 (ii)  9.79 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.28      0.11

PEAK FLOW (cms)=      0.64      0.27      0.870 (iii)
TIME TO PEAK (hrs)=   1.33      1.42      1.33
RUNOFF VOLUME (mm)=   56.20     40.11     48.47
TOTAL RAINFALL (mm)=  57.20     57.20     57.20
RUNOFF COEFFICIENT =   0.98      0.70      0.85

```

TOTALS

```

V V I SS U U A A L
W I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000
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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\c3f0b2f1-e20c-4c5f-b1b3-35beec3326ec\sc
Summary filename:
C:\Users\kbelanger\AppData\Local\Civica\XH5\f0bf8b14-d4aa-429f-ade8-fac37fdee83\c3f0b2f1-e20c-4c5f-b1b3-35beec3326ec\sc

```

```

-----
| ADD HYD ( 0901) |
| 1 + 2 = 3 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0201):  3.45  0.870  1.33  48.47
+ ID2= 2 ( 0202):  5.39  0.914  1.33  40.68
=====
ID = 3 ( 0901):  8.84  1.784  1.33  43.72

```

```

DATE: 12/05/2025          TIME: 02:22:23
USER:

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

COMMENTS: _____

```

-----
| ADD HYD ( 0901) |
| 3 + 2 = 1 |
-----
      AREA   QPEAK   TPEAK   R.V.
      (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  1.784  1.33  43.72
+ ID2= 2 ( 0401):  0.43  0.073  1.42  40.00
=====
ID = 1 ( 0901):  9.27  1.846  1.33  43.55

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

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

```

```

-----
| CHICAGO STORM |
| Ptotal= 63.73 mm |
-----
IDF curve parameters: A= 734.813
                      B= 0.000
                      C= 0.699
used in: INTENSITY = A / (t + B)^C

```

```

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

```

```

=====
V V I SSSS U U A L (v 6.2.2019)
V V I SS U U A A L
V V I SS U U AAAAA L

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.36	1.00	25.36	2.00	10.59	3.00	6.17
0.17	5.99	1.17	146.95	2.17	9.36	3.17	5.81
0.33	6.83	1.33	31.12	2.33	8.42	3.33	5.50
0.50	8.04	1.50	19.62	2.50	7.68	3.50	5.23
0.67	9.97	1.67	14.96	2.67	7.09	3.67	4.98
0.83	13.63	1.83	12.33	2.83	6.59	3.83	4.76

RUNOFF VOLUME (mm)=	62.73	36.56	46.50
TOTAL RAINFALL (mm)=	63.73	63.73	63.73
RUNOFF COEFFICIENT =	0.98	0.57	0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

Area (ha)= 5.39
Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.86	2.53
Dep. Storage (mm)=	1.00	3.40
Average Slope (%)=	1.00	2.00
Length (m)=	189.56	40.00
Mannings n =	0.013	0.250

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

CALIB
STANDHYD (0203)
ID= 1 DT= 5.0 min

Area (ha)= 0.43
Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.36	1.083	25.36	2.083	10.59	3.08	6.17
0.167	5.36	1.167	25.36	2.167	10.59	3.17	6.17
0.250	5.99	1.250	146.95	2.250	9.36	3.25	5.81
0.333	5.99	1.333	146.95	2.333	9.36	3.33	5.81
0.417	6.83	1.417	31.12	2.417	8.42	3.42	5.50
0.500	6.83	1.500	31.12	2.500	8.42	3.50	5.50
0.583	8.04	1.583	19.62	2.583	7.68	3.58	5.23
0.667	8.04	1.667	19.62	2.667	7.68	3.67	5.23
0.750	9.97	1.750	14.96	2.750	7.09	3.75	4.98
0.833	9.97	1.833	14.96	2.833	7.09	3.83	4.98
0.917	13.63	1.917	12.33	2.917	6.59	3.92	4.76
1.000	13.63	2.000	12.33	3.000	6.59	4.00	4.76

Max.Eff.Inten.(mm/hr)=	146.95	108.91
over (min)	5.00	15.00
Storage Coeff. (min)=	3.21 (ii)	10.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.27	0.10

PEAK FLOW (cms)=	0.81	0.43	1.047 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33

TOTALS

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.36	1.083	25.36	2.083	10.59	3.08	6.17
0.167	5.36	1.167	25.36	2.167	10.59	3.17	6.17
0.250	5.99	1.250	146.95	2.250	9.36	3.25	5.81
0.333	5.99	1.333	146.95	2.333	9.36	3.33	5.81
0.417	6.83	1.417	31.12	2.417	8.42	3.42	5.50
0.500	6.83	1.500	31.12	2.500	8.42	3.50	5.50
0.583	8.04	1.583	19.62	2.583	7.68	3.58	5.23
0.667	8.04	1.667	19.62	2.667	7.68	3.67	5.23
0.750	9.97	1.750	14.96	2.750	7.09	3.75	4.98
0.833	9.97	1.833	14.96	2.833	7.09	3.83	4.98
0.917	13.63	1.917	12.33	2.917	6.59	3.92	4.76
1.000	13.63	2.000	12.33	3.000	6.59	4.00	4.76

Max.Eff.Inten.(mm/hr)=	146.95	189.72
over (min)	5.00	10.00
Storage Coeff. (min)=	1.51 (ii)	6.97 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.33	0.14

TOTALS

PEAK FLOW (cms)= 0.02 0.08 0.088 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 62.72 44.20 46.05
 TOTAL RAINFALL (mm)= 63.73 63.73 63.73
 RUNOFF COEFFICIENT = 0.98 0.69 0.72

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.36	1.083	25.36	2.083	10.59	3.08	6.17
0.167	5.36	1.167	25.36	2.167	10.59	3.17	6.17
0.250	5.99	1.250	146.95	2.250	9.36	3.25	5.81
0.333	5.99	1.333	146.95	2.333	9.36	3.33	5.81
0.417	6.83	1.417	31.12	2.417	8.42	3.42	5.50
0.500	6.83	1.500	31.12	2.500	8.42	3.50	5.50
0.583	8.04	1.583	19.62	2.583	7.68	3.58	5.23
0.667	8.04	1.667	19.62	2.667	7.68	3.67	5.23
0.750	9.97	1.750	14.96	2.750	7.09	3.75	4.98
0.833	9.97	1.833	14.96	2.833	7.09	3.83	4.98
0.917	13.63	1.917	12.33	2.917	6.59	3.92	4.76
1.000	13.63	2.000	12.33	3.000	6.59	4.00	4.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0401)
 IN= 2---> OUT= 1
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0203)	0.430	0.088	1.33	46.05
OUTFLOW: ID= 1 (0401)	0.430	0.086	1.42	46.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.90
 TIME SHIFT OF PEAK FLOW (min)= 5.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0010

CALIB
 STANDHYD (0201)
 ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

Max.Eff.Inten.(mm/hr)= 146.95 124.85
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.81 (ii) 9.27 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.12

TOTALS

PEAK FLOW (cms)= 0.71 0.32 0.994 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 62.72 46.23 54.81
 TOTAL RAINFALL (mm)= 63.73 63.73 63.73
 RUNOFF COEFFICIENT = 0.98 0.73 0.86

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):	3.45	0.994	1.33	54.81
+ ID2= 2 (0202):	5.39	1.047	1.33	46.50
===== ID = 3 (0901):	8.84	2.041	1.33	49.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0901) |
| 3 + 2 = 1 |
-----
          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 3 ( 0901):  8.84  2.041  1.33  49.74
+ ID2= 2 ( 0401):  0.43  0.086  1.42  46.05
-----
ID = 1 ( 0901):  9.27  2.112  1.33  49.57

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V  V  I  SSSSS  U  U  A  L          (v 6.2.2019)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  Y  M  M  0  0
000  T  T  H  H  Y  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\fh0bf8b14-d4aa-429f-ade8-fac37fdee83\445
 d7166-05b5-4f44-8bc2-f73a324efb7c\sc

Summary filename:
 C:\Users\kbelanger\AppData\Local\Civica\XH5\fh0bf8b14-d4aa-429f-ade8-fac37fdee83\445
 d7166-05b5-4f44-8bc2-f73a324efb7c\sc

DATE: 12/05/2025

TIME: 02:22:22

USER:

COMMENTS: _____

```

-----
*****
** SIMULATION : Run 06 **
*****

```

```

-----
| CHICAGO STORM |   IDF curve parameters: A= 808.295
| Ptotal= 70.10 mm |   B= 0.000
|                   |   C= 0.699
-----

```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.89	1.00	27.89	2.00	11.65	3.00	6.79
0.17	6.59	1.17	161.65	2.17	10.29	3.17	6.39
0.33	7.52	1.33	34.23	2.33	9.26	3.33	6.05
0.50	8.85	1.50	21.58	2.50	8.45	3.50	5.75
0.67	10.96	1.67	16.46	2.67	7.80	3.67	5.48
0.83	15.00	1.83	13.56	2.83	7.25	3.83	5.24

```

-----
| CALIB |
| STANDHYD ( 0202) |   Area (ha)= 5.39
| ID= 1 DT= 5.0 min |   Total Imp(%)= 53.00   Dir. Conn.(%)= 38.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 2.86	2.53
Dep. Storage	(mm)= 1.00	3.40
Average Slope	(%)= 1.00	2.00
Length	(m)= 189.56	40.00
Mannings n	= 0.013	0.250

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.89	1.083	27.89	2.083	11.65	3.08	6.79
0.167	5.89	1.167	27.89	2.167	11.65	3.17	6.79
0.250	6.59	1.250	161.65	2.250	10.29	3.25	6.39

0.333	6.59	1.333	161.65	2.333	10.29	3.33	6.39
0.417	7.52	1.417	34.23	2.417	9.26	3.42	6.05
0.500	7.52	1.500	34.23	2.500	9.26	3.50	6.05
0.583	8.85	1.583	21.58	2.583	8.45	3.58	5.75
0.667	8.85	1.667	21.58	2.667	8.45	3.67	5.75
0.750	10.96	1.750	16.46	2.750	7.80	3.75	5.48
0.833	10.96	1.833	16.46	2.833	7.80	3.83	5.48
0.917	15.00	1.917	13.56	2.917	7.25	3.92	5.24
1.000	15.00	2.000	13.56	3.000	7.25	4.00	5.24

Max. Eff. Inten. (mm/hr)= 161.65 126.30
over (min) 5.00 10.00
Storage Coeff. (min)= 3.09 (ii) 9.52 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.12

PEAK FLOW (cms)= 0.89 0.56 *TOTALS* 1.352 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 69.10 41.96 52.27
TOTAL RAINFALL (mm)= 70.10 70.10 70.10
RUNOFF COEFFICIENT = 0.99 0.60 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0203) | Area (ha)= 0.43
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.89	1.083	27.89	2.083	11.65	3.08	6.79

0.167	5.89	1.167	27.89	2.167	11.65	3.17	6.79
0.250	6.59	1.250	161.65	2.250	10.29	3.25	6.39
0.333	6.59	1.333	161.65	2.333	10.29	3.33	6.39
0.417	7.52	1.417	34.23	2.417	9.26	3.42	6.05
0.500	7.52	1.500	34.23	2.500	9.26	3.50	6.05
0.583	8.85	1.583	21.58	2.583	8.45	3.58	5.75
0.667	8.85	1.667	21.58	2.667	8.45	3.67	5.75
0.750	10.96	1.750	16.46	2.750	7.80	3.75	5.48
0.833	10.96	1.833	16.46	2.833	7.80	3.83	5.48
0.917	15.00	1.917	13.56	2.917	7.25	3.92	5.24
1.000	15.00	2.000	13.56	3.000	7.25	4.00	5.24

Max. Eff. Inten. (mm/hr)= 161.65 216.56
over (min) 5.00 10.00
Storage Coeff. (min)= 1.45 (ii) 6.63 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.33 0.14

PEAK FLOW (cms)= 0.02 0.09 *TOTALS* 0.102 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 69.10 50.13 52.01
TOTAL RAINFALL (mm)= 70.10 70.10 70.10
RUNOFF COEFFICIENT = 0.99 0.72 0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR(0401) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.102	1.33	52.01
OUTFLOW: ID= 1 (0401)	0.430	0.091	1.42	52.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 89.08

TIME SHIFT OF PEAK FLOW (min)= 5.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0013

CN* = 92.3 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | CALIB |
 | STANDHYD (0201) | Area (ha)= 3.45
 | ID= 1 DT= 5.0 min | Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.97	1.48
Dep. Storage	(mm)=	1.00	3.39
Average Slope	(%)=	1.00	2.00
Length	(m)=	151.66	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.89	1.083	27.89	2.083	11.65	3.08	6.79
0.167	5.89	1.167	27.89	2.167	11.65	3.17	6.79
0.250	6.59	1.250	161.65	2.250	10.29	3.25	6.39
0.333	6.59	1.333	161.65	2.333	10.29	3.33	6.39
0.417	7.52	1.417	34.23	2.417	9.26	3.42	6.05
0.500	7.52	1.500	34.23	2.500	9.26	3.50	6.05
0.583	8.85	1.583	21.58	2.583	8.45	3.58	5.75
0.667	8.85	1.667	21.58	2.667	8.45	3.67	5.75
0.750	10.96	1.750	16.46	2.750	7.80	3.75	5.48
0.833	10.96	1.833	16.46	2.833	7.80	3.83	5.48
0.917	15.00	1.917	13.56	2.917	7.25	3.92	5.24
1.000	15.00	2.000	13.56	3.000	7.25	4.00	5.24

Max. Eff. Inten. (mm/hr)= 161.65 141.85
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.71 (ii) 8.84 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.29 0.12

TOTALS
 1.116 (iii)
 1.33
 61.02
 70.10
 0.87

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 | ADD HYD (0901) |
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

 ID1= 1 (0201): 3.45 1.116 1.33 61.02
 + ID2= 2 (0202): 5.39 1.352 1.33 52.27
 =====
 ID = 3 (0901): 8.84 2.468 1.33 55.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (0901) |
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.

 ID1= 3 (0901): 8.84 2.468 1.33 55.69
 + ID2= 2 (0401): 0.43 0.091 1.42 52.02
 =====
 ID = 1 (0901): 9.27 2.549 1.33 55.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 V V I SSSS U U A L (v 6.2.2019)
 V V I SS U U A A L
 V V I SS U U A A L
 V V I SS U U A A L
 VV I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
 0 0 T T H H Y Y MM MM 0 0
 0 0 T T H H Y M M 0 0
 000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voim.dat

Output filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-facf37fdee83\9d8ec0bb-2bbc-4579-860f-18463aaca2d1\sc

Summary filename:

C:\Users\kbelanger\AppData\Local\Civica\XH5\F0bf8b14-d4aa-429f-ade8-facf37fdee83\9d8ec0bb-2bbc-4579-860f-18463aaca2d1\sc

DATE: 12/05/2025

TIME: 02:22:23

USER:

COMMENTS: _____

** SIMULATION : Run 08 **

| READ STORM | Filename: C:\Users\kbelanger\AppData\Local\Temp\
| | d8952c79-96ed-4c0b-8238-70bfa00b6b7a\F8d8ea65
| Ptotal=193.00 mm | Comments: TIMMINS

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	15.00	3.00	3.00	6.00	43.00	9.00	13.00
0.25	15.00	3.25	3.00	6.25	43.00	9.25	13.00
0.50	15.00	3.50	3.00	6.50	43.00	9.50	13.00
0.75	15.00	3.75	3.00	6.75	43.00	9.75	13.00
1.00	20.00	4.00	5.00	7.00	20.00	10.00	13.00
1.25	20.00	4.25	5.00	7.25	20.00	10.25	13.00
1.50	20.00	4.50	5.00	7.50	20.00	10.50	13.00
1.75	20.00	4.75	5.00	7.75	20.00	10.75	13.00
2.00	10.00	5.00	20.00	8.00	23.00	11.00	8.00
2.25	10.00	5.25	20.00	8.25	23.00	11.25	8.00
2.50	10.00	5.50	20.00	8.50	23.00	11.50	8.00
2.75	10.00	5.75	20.00	8.75	23.00	11.75	8.00

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-----
| CALIB |
| STANDHYD ( 0202) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 5.39
Total Imp(%)= 53.00 Dir. Conn.(%)= 38.00

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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.86 2.53
Dep. Storage (mm)= 1.00 3.40
Average Slope (%)= 1.00 2.00
Length (m)= 189.56 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00

2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)= 43.00 52.51
over (min) 5.00 15.00
Storage Coeff. (min)= 5.26 (ii) 14.39 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.21 0.08

PEAK FLOW (cms)= 0.24 0.36 0.604 (iii)
TIME TO PEAK (hrs)= 6.92 7.00 7.00
RUNOFF VOLUME (mm)= 192.00 156.60 170.05
TOTAL RAINFALL (mm)= 193.00 193.00 193.00
RUNOFF COEFFICIENT = 0.99 0.81 0.88

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 82.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0203) | Area (ha)= 0.43
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 10.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.22	0.22
Dep. Storage (mm)=	1.00	5.12
Average Slope (%)=	1.00	2.00
Length (m)=	53.54	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00

0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max.Eff.Inten.(mm/hr)= 43.00 75.07
over (min) 5.00 15.00
Storage Coeff. (min)= 2.46 (ii) 10.38 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.01 0.04 0.050 (iii)
TIME TO PEAK (hrs)= 6.50 7.00 7.00
RUNOFF VOLUME (mm)= 192.00 169.66 171.88
TOTAL RAINFALL (mm)= 193.00 193.00 193.00
RUNOFF COEFFICIENT = 0.99 0.88 0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 86.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

 | RESERVOIR(0401) |
 | IN= 2----> OUT= 1 |
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.0017
0.0490	0.0004	0.1130	0.0026
0.0850	0.0009	0.1240	0.0033

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0203)	0.430	0.050	7.00	171.88
OUTFLOW: ID= 1 (0401)	0.430	0.050	7.00	171.88

PEAK FLOW REDUCTION [Qout/Qin](%)= 99.83
 TIME SHIFT OF PEAK FLOW (min)= 0.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0004

 | CALIB |
 | STANDHYD (0201) |
ID= 1 DT= 5.0 min

Area (ha)= 3.45
 Total Imp(%)= 57.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.97	1.48
Dep. Storage (mm)=	1.00	3.39
Average Slope (%)=	1.00	2.00
Length (m)=	151.66	40.00
Mannings n =	0.013	0.250

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00

0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Max. Eff. Inten. (mm/hr)= 43.00 46.95
 over (min) 5.00 15.00
 Storage Coeff. (min)= 4.60 (ii) 14.15 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.23 0.08

TOTALS
 PEAK FLOW (cms)= 0.21 0.19 0.405 (iii)
 TIME TO PEAK (hrs)= 6.92 7.00 7.00
 RUNOFF VOLUME (mm)= 192.00 172.70 182.74
 TOTAL RAINFALL (mm)= 193.00 193.00 193.00
 RUNOFF COEFFICIENT = 0.99 0.89 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 92.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.


```

| ADD HYD ( 0901)|
| 1 + 2 = 3 |
-----
      ID1= 1 ( 0201):   3.45  0.405  7.00  182.74
+ ID2= 2 ( 0202):   5.39  0.604  7.00  170.05
=====
      ID = 3 ( 0901):   8.84  1.009  7.00  175.00

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0901)|
| 3 + 2 = 1 |
-----
      ID1= 3 ( 0901):   8.84  1.009  7.00  175.00
+ ID2= 2 ( 0401):   0.43  0.050  7.00  171.88
=====
      ID = 1 ( 0901):   9.27  1.058  7.00  174.86

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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Appendix D: SWMF Design Calculations



PROJECT	Blue Mountain P2 Parking Lot	FILE	125001-01
		DATE	December 9, 2025
SUBJECT	Stage- Storage- Discharge Tables	NAME	KB
		PAGE	1 OF 4

Stage - Storage Table

Elevation m	Main Cell			Total	Total
	Depth m	Area m ²	Avg. Area m ²	Accum. Vol. m ³	Accum. Vol. m ³
224.30	0.00	26	26	0	0
224.40	0.10	48	37	4	4
224.50	0.20	65	56	6	9
224.60	0.30	86	75	8	17
224.70	0.40	103	94	9	26
224.80	0.50	31	67	7	33

Stage = 0.10
 Top of bank = 224.80
 Bottom Elev. = 224.30
 Top of Extended Detention = 224.00

PROJECT	Blue Mountain P2 Parking Lot	FILE	125001-01
		DATE	December 9, 2025
SUBJECT	Stage- Storage- Discharge Tables	NAME	KB
		PAGE	2 OF 4

Stage - Discharge Table

<u>Orifice Control</u>	Orifice Plate	<u>Ditch Inlet Catchbasin</u>	DICB	<u>Weir Control</u>	Emergency Weir
Orifice/Pipe Dia. (mm)	275	Grate Size	600x600	Weir Width (m)	3.5
Cross Sectional Area (m ²)	0.0594	Grate Slope (H:V)	3:1	Sill Elevation (m)	224.76
Orifice Coefficient	0.63	Sill Elevation (m)	224.30	Weir Coefficient	1.65
Inv. Elevation (m)	224.20			Weir Side Slopes (H:V)	5

Water Level m	Primary Orifice		DICB		Emergency Weir		Total
	Head m	Discharge m ³ /s	Head m	Discharge m ³ /s	Head m	Discharge m ³ /s	Discharge m ³ /s
224.30	0.00	0.000	0.00	0.000	0.00	0.000	0.000
224.40	0.06	0.041	0.10	0.049	0.00	0.000	0.049
224.50	0.16	0.067	0.20	0.153	0.00	0.000	0.067
224.60	0.26	0.085	0.30	0.315	0.00	0.000	0.085
224.70	0.36	0.100	0.40	0.535	0.00	0.000	0.100
224.80	0.46	0.113	0.50	0.813	0.04	0.049	0.113



PROJECT	Blue Mountain P2 Parking Lot	FILE	125001-01
		DATE	December 9, 2025
SUBJECT	Stage- Storage- Discharge Tables	NAME	KB
		PAGE	3 OF 4

Stage-Storage-Discharge Table

Bottom Elev. = 224.30 m	<u>Orifice Control</u>	Orifice Plate	<u>DICB</u>	<u>Weir Control</u>	Emergency Weir
Perm Pool = 224.30 m	Orifice/Pipe Dia. (mm)	275	Grate Size (mm)	600x600	Weir Width (m)
Top of bank = 224.80 m	Inv. Elevation (m)	224.20	Inv. Elevation (m)	224.30	Sill Elevation (m)
			Side Slope (H:V)	3:1	Weir Side Slopes (H:V)
					5

Stage	Discharge				Volume
Water Level	Primary	DICB	Emergency Weir	Total	Live Total
m	m ³ /s	m ³ /s	m ³ /s	m ³ /s	m ³
224.30	0.000	0.000	0.000	0.000	0
224.40	0.041	0.049	0.000	0.049	4
224.50	0.067	0.153	0.000	0.067	9
224.60	0.085	0.315	0.000	0.085	17
224.70	0.100	0.535	0.000	0.100	26
224.80	0.113	0.813	0.049	0.113	33

PROJECT	Blue Mountain P2 Parking Lot	FILE	125001-01
		DATE	December 9, 2025
SUBJECT	Stage- Storage- Discharge Tables	NAME	KB
		PAGE	4 OF 4

SWMF Operating Characteristics

Storm Event	Storage (m ³)		Discharge (m ³ /s)		Water Level (m)	
	Chicago	SCS	Chicago	SCS	Chicago	SCS
25 mm	2	-	0.018	-	224.35	-
1:2-Year	2	4	0.022	0.046	224.35	224.40
1:5-Year	4	7	0.044	0.067	224.40	224.45
1:10-Year	5	10	0.056	0.082	224.43	224.51
1:25-Year	8	16	0.073	0.096	224.49	224.59
1:50-Year	10	21	0.086	0.105	224.51	224.65
1:100-Year	13	27	0.091	0.115	224.55	224.70
Regional	4	-	0.050	-	224.40	-

Project Details

P2 Parking Area	125001
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Prepared By:

KB	12/5/2025
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Source: Hydraulic Structures, C.D.Smith, University of Saskatchewan
 Trapezoidal Broad Crested Weir

The trapezoidal weir is a combination of the rectangular weir and the triangular weir

Parameters:

Weir Bottom Width (m)	W =	3
Head (m)	H =	0.1
Weir Downstream Length (m)	L =	0.1
Side Slope (H:V)	S =	5.0

Rectangular Weir

$$Q = CWH^{3/2}$$

H/L =	1.000
C =	1.700

Rectangular Weir Flow (m ³ /s)	Q =	0.161
---	-----	--------------

Triangular Weir

$$Q = CH^{5/2} \tan(\theta/2)$$

Notch Angle (one side)	78.690	degrees
Notch Angle (one side)	1.373400767	radians

$\tan(\theta/2)$	5.000000
------------------	----------

Triangular H/L	1.000
C	1.280

Triangular Weir Flow (m ³ /s)	Q =	0.020
--	-----	--------------

Total Rectangular + Triangular Weir

Trapezoidal Weir Flow (m ³ /s)	Q =	0.182
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Water Quality Requirements

Project Details

P2 Parking Area	125001
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Prepared By

KB	Dec./25
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Water Quality Sizing Criteria

Methodology & Data Source	Volumetric water quality criteria as presented in Table 3.2 in Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning & Design Manual (SWMPDM) March 2003.
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Contributing Catchments

Catchment ID	Area (ha)	Impervious (%)
Proposed	101.69	18%
Total	101.69	18.0%

Treatment Method Details

SWM Facility Type	Wet Pond
Target Treatment Level	Enhanced Level
Treatment Percentage	80%

Treatment Requirements

Water Quality Storage Requirement	9,915 m ³
Extended Detention Volume (40 m³)	4,068 m ³
Permanent Pool Volume Required	5,847 m ³
25 mm Storm Runoff Depth	7 mm
25 mm Storm Runoff Volume	6,915 m ³
Required Extended Detention Volume	6,915 m ³
Erosion Control Storage Required	8,135 m ³

Permanent Pool Volume Provided 72,600 **Provided > Required**

Extended Detention Storage Provided 8,900 **Provided > Required**

Active Storage Provided 40,000 **Provided > Required**