Stormwater Management and Servicing Report

1480 Richmond Road

City of Ottawa



PEARSON ENGINEERING

PEARSONENG.COM

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26047

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Stormwater Management & Servicing report
1480 Richmond Road, Ottawa

1. Introduction

PEARSON Engineering Ltd. has been retained by Zail Properties (Client) to prepare an Stormwater Management (SWM) & Servicing Report in support of a proposed commercial development (Project) located at 1480 Richmond Road in the City of Ottawa (City).

The subject property consists of an existing bank facility along with its associated parking lot. The Project proposes changing the existing building use from a bank to a restaurant with an updated drive-through and parking. The site (Bank, Drive through and revised parking lot) is approximately 0.26 ha in size and situated on a 1.4 ha commercial lot which fronts onto Richmond Road to the north, a vacant lot to the west, Carling Avenue to the south and a mid-rise apartment building to the east. The location of the site can be seen on Figure 1.

The objective of this report is to assess the existing municipal infrastructure in the vicinity of the Project, the onsite Stormwater Management (SWM) facilities and internal services required to service the proposed Project. The report also includes design calculations and a brief outline of the proposed internal services, as well as comments regarding the ability of the various secondary utilities to service the site.

2. Supporting Documents

The following documents have been referenced in the preparation of this report:

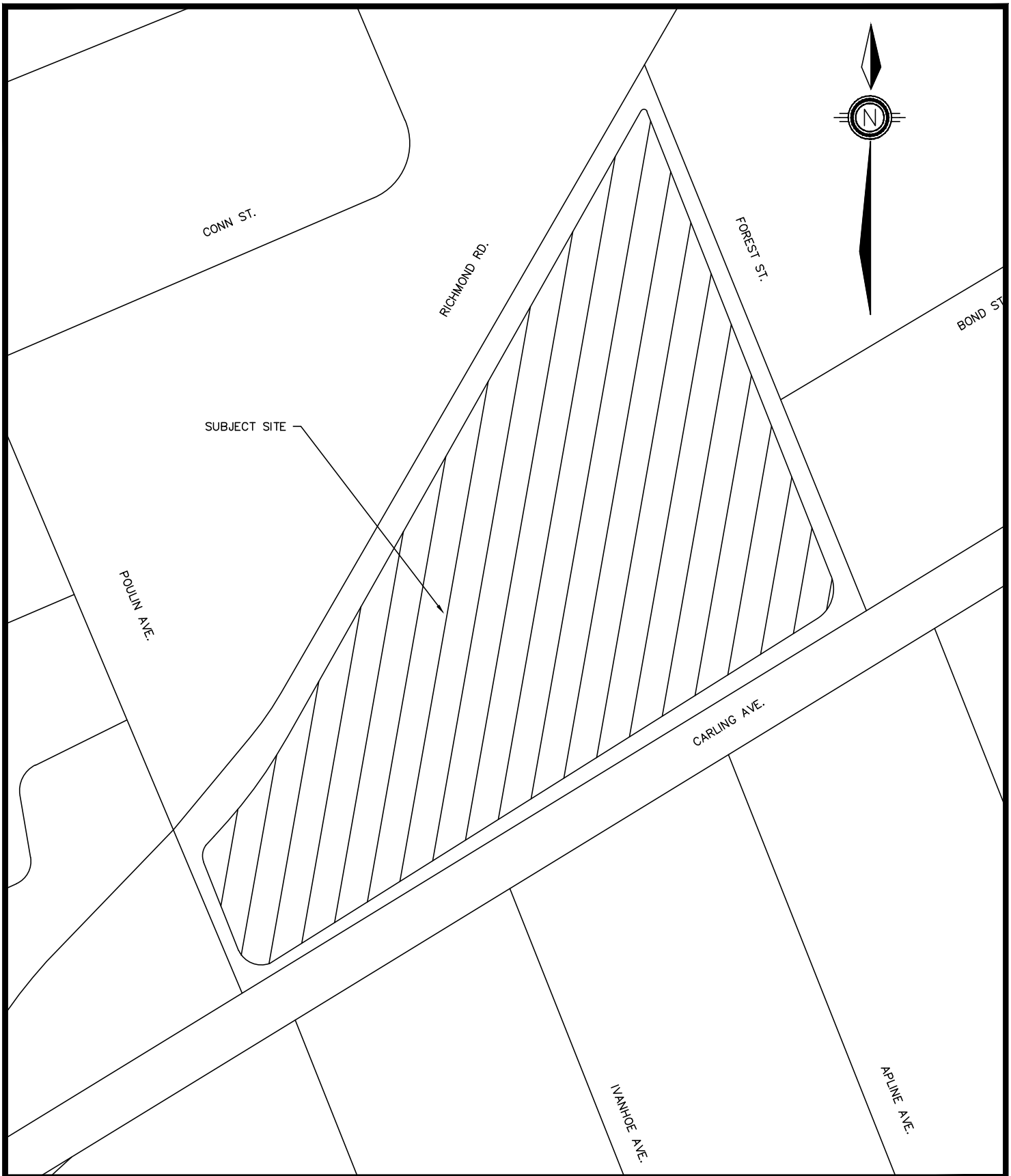
- Ministry of the Environment, Design Guidelines for Sewage Works, 2008
- Ministry of the Environment, Design Guidelines for Drinking-Water Systems, 2008
- Ministry of the Environment, Stormwater Management Planning and Design Manual, March 2003
- City of Ottawa, Sewer Design Guidelines, December 2025
- City of Ottawa, Water Distribution Design Guidelines, May 2026

3. Water Supply and Distribution

3.1. Water Servicing Design Criteria

The site currently consists of a commercial land use area of approximately 0.26 ha. The existing commercial bank building includes two men's washroom facilities and two women's washroom facilities, each equipped with one water closet and one lavatory sink. The building also includes one kitchenette sink and one janitor's sink. Based on the Ontario Building Code (OBC), Volume 1, Table 7.4.9.3, the existing development has a total fixture load of 27.5, corresponding to a maximum domestic water demand of 1.98 L/s (31.5 gpm).

The proposed development will consist of three restaurant units, each equipped with one men's washroom and one women's washroom, each containing one water closet and one lavatory sink. Each restaurant unit will also include one kitchen sink and one janitor's sink. Based on the OBC, Volume 1, Table 7.4.9.3, the proposed development has a total fixture load of 46.5, corresponding to a maximum domestic water demand of 2.52 L/s (39.95 gpm). The domestic water demand calculations for the existing and proposed development are provided in Appendix A.



ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

SITE LOCATION PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW	HORIZ SCALE		PROJECT #	26047
DRAWN BY	JM	VERT SCALE		DRAWING #	FIG–1
CHECKED BY	MWD	DATE	JUNE 2026	REVISION #	0

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3.2. Internal Water Distribution System

The existing building is serviced by a 150 mm diameter water service located at the northeast corner of the building. The site is located within a 1.40 ha. commercial development which includes 4 buildings (including the subject site) that are being serviced by a 200 mm diameter watermain connected to the existing 300 mm diameter municipal watermain on Richmond Road.

Based on the fixture-unit calculations, the proposed development will result in an increased peak water demand of 0.54 L/s compared to the existing conditions. The proposed development will be serviced through the existing 150 mm diameter water service. Given the relatively minor increase in peak water demand, the existing water supply system is expected to accommodate the proposed development. The existing water servicing location is shown on Drawing SS-1 in Appendix J.

3.3. Fire Fighting Requirements

The proposed development is required to follow the City's Water Transmission and Distribution Policies and Design Standards which outlines new developments are to provide Fire Protection based on the latest version of the Fire Underwriter Survey (FUS) document.

The required fire flow was calculated as per the 2020 edition of the FUS assessment considering the building is constructed using non-combustible material including structural elements, walls, floors, and roofs constructed with a minimum 1-hour fire resistance rating. The building also includes a sprinkler system. Based on the listed conditions, the required fire flow for the building is determined to be 50 L/s. Fire flow calculations are included in Appendix A.

A hydrant flow test was completed by Active Fire Solution on September 30th, 2026, indicating a static pressure of 50 psi at the existing hydrant placed on the eastern side of the existing building within the commercial plaza. This flow test also resulted in a flow that can be supplied of approximately 204.92 L/s (3,248 GPM) at a residual pressure of 20 psi from the existing hydrant. As the required fire flow of 50 L/s is less than the 204.92 L/s, the existing hydrant is adequate for the site.

The Boundary Conditions for the site were provided by the City of Ottawa using the project's domestic and fire flow demands. Water pressures shown in Table 1 were calculated based on the Hydraulic Grade Lines (HGL) provided by the City from these boundary conditions. When comparing to the minimum and maximum allowable water pressures from City of Ottawa Water Design Guidelines, it can be seen that the site water pressures fall within City limits. Fire flow analysis, water pressure conversion and boundary conditions can be found in Appendix A.

Table 1: Water Demand

Design Parameter	Demand (L/s)	HGL (m)	Pressure (PSI)	Pressure (kPa)	City of Ottawa minimum (kPa)	City of Ottawa maximum (kPa)
Average Daily Demand	0.08	109.20	48.60	335.09	-	552
Peak Hour	2.52	115.90	58.10	400.58	276	552
Max Day + Fire Flow	52.52	110.60	50.60	348.88	140	552

4. Sanitary Servicing

4.1. Sanitary Design Criteria

The site consists of a commercial land use area of approximately 0.26 ha. For a conservative assessment, the maximum domestic water demand from the proposed plumbing fixtures is assumed to discharge to the existing sanitary sewer system. Based on the Ontario Building Code (OBC), Volume 1, Table 7.4.9.3, the proposed sanitary flow is estimated at 2.52 L/s. An additional extraneous flow allowance of 0.08 L/s, based on a rate of 0.33 L/ha/s, has been included, resulting in a total peak sanitary flow of 2.60 L/s. The sanitary flow calculations for the site are provided in Appendix B.

4.2. Internal Sanitary Sewer System

The site is currently serviced by an existing 150 mm diameter sanitary service connection to the building. The existing service is to be maintained and reused for the proposed development. The existing sanitary service discharges to an existing 200 mm diameter sanitary sewer located on-site. The private system ultimately outlets to the existing 200 mm diameter municipal sanitary sewer on Richmond Road.

A CCTV inspection of the existing sanitary service was completed by Clean Water Works Inc., confirming that the service is free of structural deficiencies but contains grease that should be flushed and cleaned. The associated inspection report is included in Appendix H. The sanitary service is connected to an existing 200 mm diameter sanitary sewer with a slope of 0.89% and a total capacity of 30.95 L/s. The proposed development will result in an additional sanitary flow of 0.53 L/s, representing approximately 1.71% of the existing sewer's total capacity. Therefore, the existing sanitary sewer is expected to have sufficient capacity to accommodate the proposed development's additional sanitary flows. The proposed sanitary servicing layout is shown on Drawing SS-1 in Appendix J.

5. Stormwater Management

A key component of the development is the need to address environmental and related SWM issues. These are examined in a framework aimed at meeting the City of Ottawa and MECP requirements. This report focuses on the necessary measures to satisfy the MECP's SWM requirements.

It is understood the objectives of the SWM plan are to:

- Protect life and property from flooding and erosion;
- Maintain water quality for ecological integrity, recreational opportunities, etc.;
- Protect and maintain groundwater flow regime(s);
- Protect aquatic and fishery communities and habitats; and
- Maintain and protect significant natural features.

5.1. Analysis Methodology

The design of the SWM Facilities for this site has been conducted in accordance with:

- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003
- City of Ottawa Sewer Design Guidelines, December 2025

In order to design the facilities to meet these requirements, it is essential to select the appropriate modeling methodology for the storm system design. Given the size of the site, the Rational Method is appropriate for the design for the SWM system.

5.2. Existing Drainage Conditions

The site is currently developed as a commercial plaza with associated parking areas, drive aisles and landscaped areas. Stormwater runoff from the site is collected by an existing catchbasin network and conveyed through the storm sewer system. The 1.40 ha. commercial lot is serviced by an existing 300 mm diameter storm sewer which ultimately outlets to the existing 450 mm diameter municipal storm sewer on Richmond Road. Details of the existing drainage conditions are shown on Drawing STM-1 in Appendix J.

As discussed with the City of Ottawa, Visual OTTHYMO was utilized to determine the pre-development and allowable peak runoff rates for the site for the 2-year through 100-year storm events. In accordance with the City of Ottawa Sewer Design Guidelines, an allowable runoff coefficient of 0.50, equivalent to 50% imperviousness in the Visual OTTHYMO model, was adopted to establish the allowable peak flows. The calculated pre-development and allowable peak flows are summarized in Table 1. The Visual OTTHYMO model parameters and modelling outputs are provided in Appendix D and E, respectively.

Table 2: Allowable Peak Flows

Catchments	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
4-Hour Chicago Storm						
Pre-Development Peak Flow (L/s)	18.29	25.15	28.88	34.54	38.71	42.85
Allowable Peak Flows (L/s)	9.95	14.06	16.31	19.88	22.75	25.52
24-Hour SCS Storm						
Pre-Development Peak Flow (L/s)	14.20	19.39	21.23	25.42	28.49	31.55
Allowable Peak Flows (L/s)	8.25	11.75	13.03	16.13	18.44	20.79

5.3. Proposed Storm Drainage System

The post-development storm drainage system will generally maintain the existing drainage patterns of the site. The majority of the site will drain to the proposed storm sewer system, designed to convey runoff from all storm events. Runoff from the parking area will be captured and conveyed through the proposed permeable paver system within the parking area. Filtered runoff from the permeable pavers will be collected by subdrains and conveyed to the proposed storm sewer system. Runoff from the grass areas between the curbs will be directed to the proposed bioretention trench for infiltration, with overflow conveyed to the proposed storm sewer system.

Stormwater runoff collected by the proposed storm sewer system will be controlled through a 75 mm diameter orifice tube located downstream of CBMH2 and underground storage chambers. The controlled discharge will connect to the existing 300 mm diameter storm sewer in the drive aisle north of the site, which conveys flows eastward.

For storm events exceeding the 100-year design storm, or in the event of an obstruction of the orifice tube, water will back up through the proposed CBMH2 at an elevation of 75.50 m and overtop the curb along the drive-through area. The resulting overland flow will be directed northernly towards the existing parking area of the commercial plaza and will eventually flow towards the Richmond Road. A small portion of the southeastern area of the site will discharge uncontrolled to the existing catchbasins servicing the adjacent development within the 1.40 ha commercial lot.

The post-development storm drainage patterns are illustrated on Drawing STM-2 in Appendix J. Calculations for the proposed stormwater management system are provided in Appendix C.

5.4. Stormwater Quantity Control

The proposed development will decrease the overall imperviousness of the site from the existing runoff coefficient of 0.86 to the with the post-development runoff coefficient of 0.78. As a result, uncontrolled post-development peak flows are lower than the existing peak flows for all design storm events. Table 3 reflects the post-development flows without any quantity controls for the site.

Table 3: Post-Development Peak Flows without Quantity Controls

Catchments	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
4-Hour Chicago Storm						
Peak Flows (L/s)	15.97	22.07	25.40	30.50	34.28	38.06
24-Hour SCS Storm						
Peak Flows (L/s)	12.54	17.28	18.98	22.86	25.73	28.60

The City of Ottawa Sewer Design Guidelines require the 100-year post-development peak flow be reduced to the 5-year peak flow using a maximum runoff coefficient of 0.50 instead of the pre-development runoff coefficient of 0.86. Several storage options in support of quantity control were explored to meet the target peak flow rates, including parking lot surface storage and underground tanks with the latter being chosen due to insufficient volume available on the parking lot surface.

To control release rates from the site, a 75mm orifice tube downstream of CBMH2 has been incorporated in the design. The 75 mm orifice represents the minimum orifice diameter permitted by the MECP Stormwater Management Planning and Design Manual to reduce the potential for blockage. The orifice will restrict the discharge from the site, temporarily backing up stormwater into the proposed underground storage chambers and providing the required storage to attenuate post-development peak flows. Table 4 summaries these target peak flows and the controlled post-development peak flows.

Table 4: Post-Development Peak Flows – Controlled to Target 0.50 Runoff Coefficient

	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
4-Hour Chicago Storm						
Allowable Peak Flow (L/s)	9.95	14.06	14.06	14.06	14.06	14.06
Post-Development Uncontrolled Flows (L/s)	4.22	5.80	6.67	7.95	8.90	9.84
Post-Development Controlled Flows (L/s)	6.38	7.94	8.69	9.80	10.55	11.28
Total Post-Development Peak Flows (L/s)	**9.98**	**12.86**	**14.34**	**16.56**	**18.14**	**19.69**
24-Hour SCS Storm						
Allowable Peak Flow (m^3/s)	8.25	11.75	11.75	11.75	11.75	11.75
Post-Development Uncontrolled Flows (L/s)	3.27	4.45	4.87	5.82	6.52	7.21
Post-Development Controlled Flows (L/s)	6.17	7.75	8.27	9.39	10.17	10.92
Total Post-Development Peak Flows (L/s)	**9.14**	**11.76**	**12.66**	**14.63**	**16.05**	**17.42**

The site has the following constraints:

- small size of the site
- The site is reducing the impervious area for the site
- Minimum MECP orifice sizing
- uncontrolled areas that cannot be captured in the proposed storm sewer

Given the above noted constraints, A best-effort approach has been adopted to minimize post-development peak flows and achieve the greatest feasible level of quantity control. Due to the limited site area and an uncontrolled discharge of 9.84 L/s, achieving the required 100-year post-development release rate equivalent to the allowable 5-year pre-development peak flow, based on a runoff coefficient of 0.50, is not feasible. The proposed underground storage chambers with a storage volume of 19 m^3 and 75 mm orifice tube have been designed to reduce the overall post-development peak flows to below the corresponding pre-development peak flows. Calculations can be found in Appendix C.

5.5. Stormwater Quality Control

The development's stormwater quality control objective is to provide Enhanced protection controls as stated in the Stormwater Management Planning and Design (SWMPD) Manual (MOE, 2003), which has been adopted by a variety of agencies including the City of Ottawa. The SWMPD Manual (MOE, 2003) specifies Enhanced protection as 80% long-term removal of total suspended solids (TSS). To achieve Enhanced protection, permanent and temporary control of erosion and sediment transport are proposed and are discussed in the following sections.

5.5.1. Permanent Quality Control

The proposed development includes impervious areas that may contribute grit, sand, oils, and other pollutants to stormwater runoff. In accordance with the MECP Stormwater Management Planning and Design Manual, an Enhanced Level of Protection requires a minimum Total Suspended Solids (TSS) removal efficiency of 80%.

A treatment train approach has been proposed to achieve the required stormwater quality control. Runoff from the parking areas will be treated through the proposed permeable paver system and subsequently conveyed through the proposed storm sewer network. Runoff from the landscaped grass areas will be directed to the proposed bioretention chambers for infiltration and treatment. The controlled discharge from the underground storage system will pass through a proposed RWM DM 1200 OS Oil and Grit Separator (OGS) unit, which provides a TSS removal efficiency of 94.4% for a contributing drainage area of 0.07 ha with a runoff coefficient of 0.75.

The combined treatment measures will provide a treatment train approach to achieve the required minimum 80% TSS removal for the site, consistent with the MECP Enhanced Level of Protection criteria. The OGS technical specifications and supporting information are provided in Appendix I.

5.5.2. Quality Control During Construction Activities

During construction, earth grading and excavation will create the potential for soil erosion and sedimentation. It is imperative that effective environmental and sedimentation controls are in place and maintained throughout the duration of construction activities to ensure stormwater runoff's quality.

Therefore, the following recommendations shall be implemented and maintained during construction to achieve acceptable stormwater runoff quality:

- Installation of silt fence along the entire perimeter of the site to reduce sediment migration onto surrounding properties;
- Restoration of exposed surfaces with vegetative and non-vegetative material as soon as construction schedules permit. The duration in which surfaces are disturbed/exposed shall not exceed 30 days;
- Reduce stormwater drainage velocities where possible; and,
- Minimize the amount of existing vegetation removed.

6. Retention Volume

As per the JF Sabourin and Associates Pinecrest Creek Stormwater Management Guidelines completed in May 2019, a minimum on-site retention of the 10 mm rainfall event is required over new and fully reconstructed impervious areas. Based on the 10 mm rainfall event, the total required volume control for the Site is 8.5 m³.

Building renovations are limited to internal tenant improvements and as such access to the roof drains for infiltration purposes are not available. Infiltration typically consists of clean water from rooftops and/or landscaped areas and not degraded storm runoff from parking lots. Therefore, retention of storm runoff for this project will consist of infiltration through a bio-retention trench within the landscaped area and detention and slow release of runoff through the use of permeable pavers.

The proposed bioretention trench will provide a volume of 1.9 m³ while the permeable paver system provides a volume control of 7.3 m³ for a total volume of 9.2 m³ exceeding the minimum requirement of 8.5 m³ based on the Pinecrest Creek Study. Retention/detention calculations can be found in Appendix C.

7. Conclusions

The proposed development will result in a minor increase in domestic water demand and sanitary flow, which can be adequately accommodated by the existing municipal infrastructure.

Stormwater quantity control will be provided through the proposed underground storage chambers and orifice tube, reducing post-development peak flows.

Stormwater quality control will be achieved through a treatment train approach consisting of the proposed OGS unit, permeable pavers, bioretention chambers, and Isolator Row Plus within the underground storage chambers.

The first 10 mm of rainfall will be captured and treated through the proposed permeable paver system and bioretention chambers, providing filtration and partial infiltration where feasible.

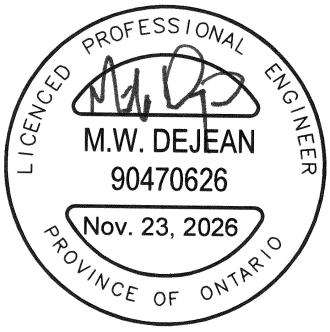
The proposed bioretention chambers within the landscaped areas will contribute to achieving the site's water balance targets.

All of which is respectfully submitted,

Pearson Engineering Ltd.



Mike Dejean, P.Eng.
Partner, Manager of Engineering Services



Appendix A

Water Servicing Calculations

1480 Richmond Road, Ottawa
OBC Water Demand Calculations for Existing Condition

Design Criteria **Commercial Bank**

(As per Table 7.4.9.3. - A, OBC Volume - 1)					
Description of Fixture or Device	**No. of Units**		**Private Use Hydraulic Load, Fixture Units**		**Total Fixtures**
Water Closet (Men)	2	x	4	=	8
Sink in Men's W.C.	2	x	2	=	4
Water Closet (Women)	2	x	4	=	8
Sink in Women's W.C.	2	x	2	=	4
Sink in Common Area (kitchenette)	1	x	1.5	=	1.5
Sink in Janitor's Closet	1	x	2	=	2
			TOTAL	**=**	**27.5**

Conversion of Fixtures units to equivalent gpm:	=	31.5 gpm	(As per Table 7.4.10.5. OBC Volume 1)
	=	1.98 L/sec	

1480 Richmond Road, Ottawa
OBC Water Demand Calculations for Proposed Condition

Design Criteria **Commercial - Restaurant**

(As per Table 7.4.9.3. - A, OBC Volume - 1)					
Description of Fixture or Device	**No. of Units**		**Private Use Hydraulic Load, Fixture Units**		**Total Fixtures**
Water Closet (Men)	3	x	4	=	12
Sink in Men's W.C.	3	x	2	=	6
Water Closet (Women)	3	x	4	=	12
Sink in Women's W.C.	3	x	2	=	6
Sink in Janitor's Closet	3	x	2	=	6
Sink in Kitchen	3	x	1.5	=	4.5
			TOTAL	**=**	**46.5**

Conversion of Fixtures units to equivalent gpm:	=	39.95 gpm	(As per Table 7.4.10.5. OBC Volume 1)
	=	2.52 L/sec	

Note: The proposed development is assumed to include one water closet and one sink in each of the men's and women's washrooms, one janitor's sink, and one kitchen sink within each of the three proposed restaurant facilities. The maximum flow rate has been calculated based on these assumptions.

The proposed development will be serviced by an existing 150 mm watermain connection. The additional water demand of 0.54 L/s is expected to be accommodated by the existing water supply system.

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Fire Flow Calculations

Required fire flow calculations as per the Fire Underwritors Survey's Water Supply for Public Fire Protection - 2020:

Location:	1480 Richmond Road, Ottawa
OBC Occupancy:	Restaurant Occupancy - Class A, Division 2
Building Foot Print:	615 m²
# of Stories:	1

Date: 2026-11-13
Project: 1480 Richmond Road, Ottawa
Project Number: 26047

Type	Construction Class	Charge
5	Wood Frame	1.50
4	Heavy Timber (A-D)	0.80 - 1.50
3	Ordinary	1.00
2	Non-Combustible	0.80
1	Fire Resistive	0.60

Construction Class: Type 2 — Non-Combustible

Automated Sprinkler Protection:

		Credit	Total
NFPA 13 sprinkler standard	Yes	30%	30%
Standard Water Supply	No	0%	
Fully Supervised System	No	0%	

Contents	Charge
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Contents Factor: Non-Combustible — **Charge:** -25%

Exposure Side & Building	Length - Height Ratio	Distance to Exposure Building (m)	Charge
North Ex. Richmond Road	Over 100	>30	0%
East Ex. Commercial Unit	Over 100	10.1 to 20	8%
South Ex. Commercial Unit	Over 100	10.1 to 20	8%
West Ex. Commercial Unit	Over 100	>30	0%
		Total:	**16%**

Separation Distance	Charge
0.0 - 3.0 m	20% -25%
3.1 - 10.0 m	15% - 20%
10.1 - 20.0 m	10% - 15%
20.1 - 30.0 m	5% - 10%
> 30.1 m	0%

Note: As per FUS 2020 Table 6, Charges for Type V were used for Wood Frame.

Fire Resistant Building: Are vertical openings and exterior vertical communications protected with a minimum one (1) hr rating? No

Calculations: *C* = 0.80 — Non-Combustible

Required Fire Flow: ***RFF = 220 x C x √A***

Where: *RFF* = required fire flow in liters per minute
C = Coefficient related to the type of construction
A = the total effective area in square meters

Total Effective Area:
A = Single Largest Floor Area
615

A = 615 m²

RFF = 4,365 L/min
Round to Nearest 1,000 L/min RFF = 4,000 L/min

* Must be > 2,000 L/min or < 45,000 L/min

Correction Factors:

Contents Charge		-1,000	L/min
RFF Adjusted for Contents	**E =**	3,000	L/min
Reduction For Sprinkler	**F =**	900	L/min
RFF w/ Sprinkler Reduction		2,100	L/min
Exposure Charge	**G =**	480	L/min
RFF w/ Exposure Charge		2,580	L/min
		2,580	

As per "Water Supply for Public Fire Protection" pg.20 note H:
RFF **= E - F + G**

RFF = 3000 L/min - 900 L/min + 480 L/min
RFF = 2580 L/min

Required Fire Flow: **RFF =** _____ L/min

Round to Nearest 1,000 L/min **RFF = 3,000 L/min**

RFF= 792 GPM

RFF = 50 L/s

ACTIVE FIRE SOLUTIONS

687 Ste Anne, Casselman ON K0A 1M0 | 613-203-0322 | info@activefiresolutions.com

NFPA 291

Fire Hydrant Flow Test Report

Recommended Practice for Fire Flow Testing and Marking of Hydrants • Underground water supply / design flow test

PROJECT INFORMATION

Project / Building	1480 Richmond Road	**Date of Test**	October 30th 2026
Address / Location	1480 Richmond Road	**Time of Test**	8:00 AM
Client / Owner		**Work Order #**	
Water Purveyor	City of Ottawa	**Purpose of Test**	Sprinkler design

TEST HYDRANTS & WATER MAIN

Residual Hydrant	City of Ottawa - 360024H012	**Main Size / Material**	6" Ductile fed from 12"
Flow Hydrant 1	1480 Richmond Beside TD Bank	**Main Type**	Dead-end
Flow Hydrant 2		**Distance Between (ft)**	100' +

TEST DATA

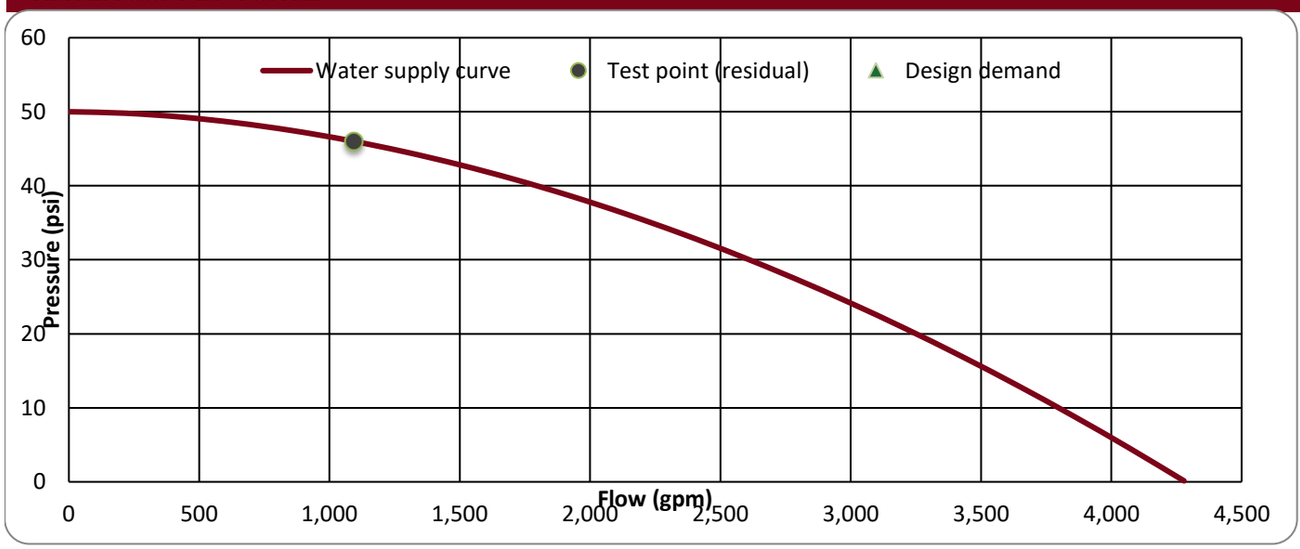
Flow Outlet	Flow Device	Nozzle / Pitot Pressure (psi)	Flow (gpm)	Notes
Outlet 1	Pitotless Nozzle 2" – on Hose Monster	11	547	
Outlet 2	Pitotless Nozzle 2" – on Hose Monster	11	547	
Outlet 3				

Flows read from Hose Monster FM-approved charts: Pitotless Nozzle 1¾" (PN1.75THD, 10–80 psi) and 2" (PN2THD, 10–70 psi) – use the "on Hose Monster" column when on the 2½" Hose Monster / Flusher, "open atmosphere" when direct on the hydrant. Open outlets: $Q = 29.83 \times c \times d^2 \times \sqrt{p}$. "Check" = reading outside the chart range.

Static Pressure (psi)	50	**Total Flow, Qf (gpm)**	**1,094**
Residual Pressure (psi)	46	**Pressure Drop (psi)**	4.0
Design Demand Flow (gpm)		**Available Flow @ 20 psi (gpm)**	**3,248**
Design Demand Pressure (psi)		**Available Pressure @ Design Flow (psi)**	
Water Supply vs. Design Demand		**NFPA 291 Hydrant Class (bonnet colour)**	**AA – Light Blue**

Q20 = Qf × ((S − 20) ÷ (S − R))^0.54 P at Q = S − (S − R) × (Q ÷ Qf)^1.85 Class AA ≥ 1500 gpm • A 1000–1499 • B 500–999 • C < 500 (rated at 20 psi residual)

WATER SUPPLY CURVE



REMARKS

Tested By (Printed Name)	Cert. / Licence No.	Witnessed By	Date	Signature
Tyler Preap	15002457	Daniel Walsh	October 30th 2026	

1480 Richmond Road Boundary Condition Request

Requested By: Jean-Miguel Roy
Date: June 5, 2026

Prepared By: Haseebuddin Syed
Reply Date: June 12, 2026

Information Provided:

Development Type: Commercial buildings
Average Day: 0.41 L/s
Max Day: 0.62 L/s
Peak Hour: 1.11 L/s
Fire Flow Demands (FUS): 45.0 L/s

Model Information:

Model: WaterGems 2025
Model Name: BC_31Dec2025
Base Model: BaseWM_31Dec2025
Node Name:

- 1480_Richmond_Rd_1, Elev. =75.0 m

Notes:

1. Pressure Zone = 1W
2. 3-hour fire flow at time 13:00 to 15:00 hours.
3. Assumed demand patterns for proposed development Weekday_ICI_2023. OWD_ICI_2023 pattern for OWD.
4. OWD demand subtracted from MXDY - ADD. Fire flow demand applied as a point load at each connection.
5. Peak Hour results were obtained using ADD x diurnal pattern and OWD x diurnal pattern.

Model Result:

	Connection: 305 mm on Richmond Road	
	HGL (m)	P (Psi)
BSDY - Min	109.3	48.8
BSDY - Max	115.9	58.1
Peak hr- Min	109.2	48.6
Peak hr- Max	115.0	56.9
MaxDay + FireFlow (45.0 L/s)	110.6	50.6

For E-mail:

******The following information may be passed on to the consultant, but do NOT forward this e-mail directly.******

The following are boundary conditions, HGL, for hydraulic analysis at 1480 Richmond Road (zone 1W) assumed to be connected via the 305 mm watermain on Richmond Road (see attached PDF for location).

Minimum HGL = 109.2 m

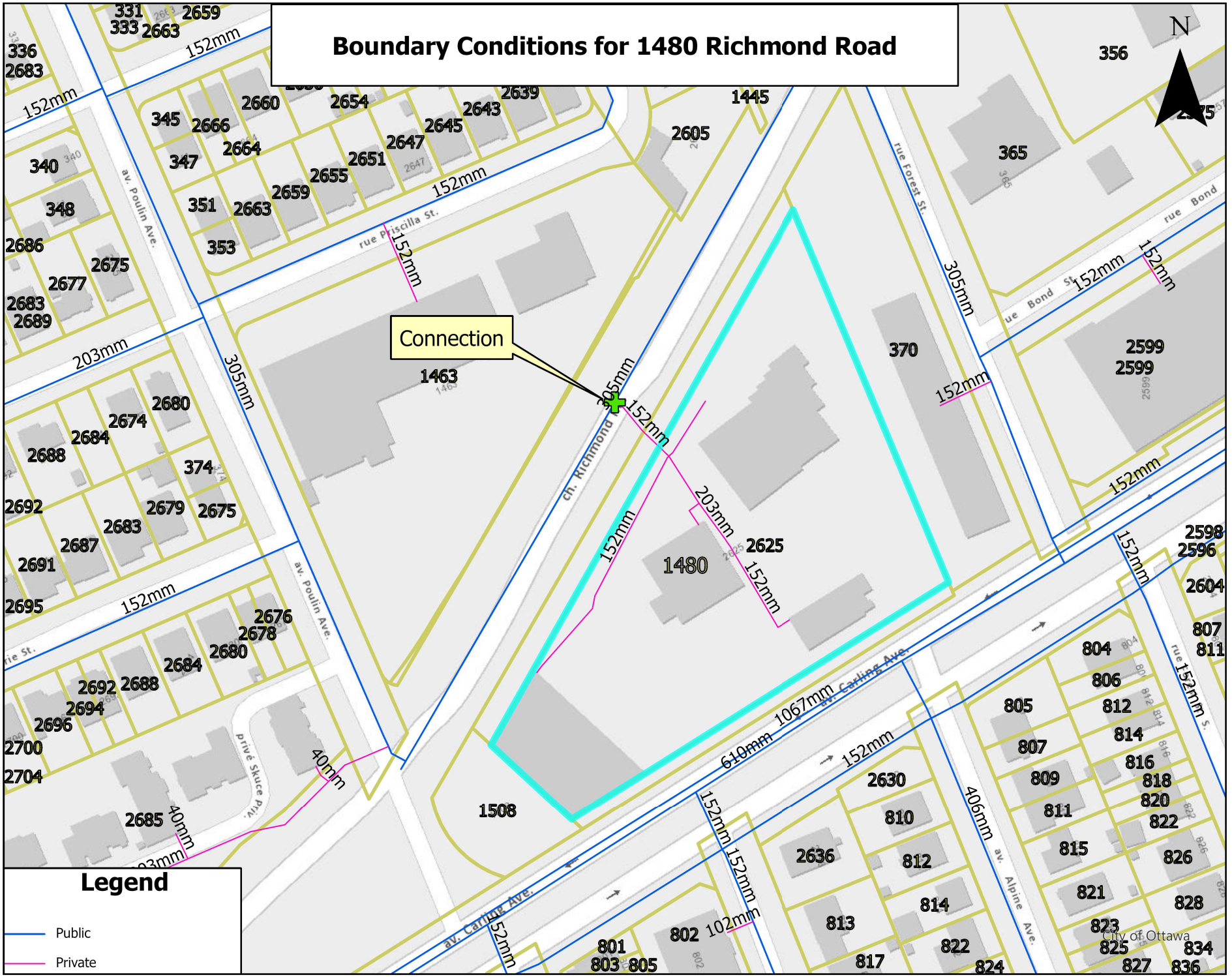
Maximum HGL = 115.9 m

Max Day + Fire Flow (45.0 L/s) = 110.6 m

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Boundary Conditions for 1480 Richmond Road



Nicole Wells

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Thursday, June 18, 2026 9:30 AM
To: Nicole Wells
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request
Attachments: 1480 Richmond Road June 2026.pdf; 1480 Richmond Road June 2026.docx

Good morning Nicole,

The following are boundary conditions, HGL, for hydraulic analysis at 1480 Richmond Road (zone 1W) assumed to be connected via the 305 mm watermain on Richmond Road (see attached PDF for location).

Minimum HGL = 109.2 m
Maximum HGL = 115.9 m
Max Day + Fire Flow (45.0 L/s) = 110.6 m

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Let me know if you have any questions.

Best,
Jean-Miguel

From: Roy, Jean-Miguel
Sent: June 04, 2026 3:01 PM
To: 'Nicole Wells' <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Thank you for the quick turnaround; your request for WBC has been forwarded to our Infrastructure and Water Services team. They will process it and provide WBC within the next two weeks.

Best,
J-M

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 04, 2026 9:47 AM

To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

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ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.

Hi Jean-Miguel,

Thank you for the clarification. Please find enclosed an updated Location of Service plan and revised calculations with the existing and the proposed water demand, required fire flow, as well as the total site basic day demand. As the development will continue to be commercial, there is no change in water demand. Let me know if you need anything further to complete the request.

Thank you,

Nicole Wells, C.E.T.
Senior Project Manager

20 YEARS PEARSON ENGINEERING

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
705-719-4785	905-597-5572	226-256-2957

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Thursday, June 4, 2026 9:21 AM
To: Nicole Wells <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Correct, they're the same.

J-M

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 04, 2026 9:19 AM
To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

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Hi Jean-Miguel,

Is the basic day demand the same as the average day demand?

Thank you,

Nicole Wells, C.E.T.
Senior Project Manager

20 YEARS PEARSON ENGINEERING

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
705-719-4785	905-597-5572	226-256-2957

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Wednesday, June 3, 2026 5:08 PM
To: Nicole Wells <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Before I can forward your request for Water Boundary Conditions to our Infrastructure & Water Services team for processing, I will need you to respond to the following questions/comments:

- It is my understanding, per the information available to me, that the existing buildings within this property are fed by a single watermain connection on Richmond Rd. Have you evaluated the total basic day demands from all these existing building uses and determine if redundancy (i.e. a

second watermain connection to Richmond Rd) is required? Requirement for redundancy applies to sites having basic day demands larger than 50 m3/day.

- Please make sure that your Location of Service screenshot shows the existing connection on Richmond as this is where the HGLs are being provided, as well as any additional connection that may be required per the above comment made.
- Does your proposed 0.08 l/s average daily demand represent an increase from the existing water demands to your building, or is it generally consistent with the existing demand? The reason I ask this question is because the City's hydraulic model already accounts for the existing basic day demands from your building; therefore, it would be important to know the existing water demands for your building to determine if there is an increase in demands – this increase is what we would be accounting for in our WBC.

Thank you Nicole.
Jean-Miguel

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 01, 2026 3:41 PM
To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.

Hi Jean-Miguel,

We would like to make a boundary condition request for our site at 1480 Richmond Rd. The project proposes the reuse of the existing water service. Please see our boundary condition information below:

a. Location of service (show on a plan or map) – See attached.
b. Type of development – Commercial; Fast food restaurant
c. Average daily demand: 0.08 l/s.
d. Maximum daily demand: 0.12 l/s.
e. Maximum hourly daily demand: 0.22 l/s.
f. Required fire flow: 45 l/s
g. Supporting Calculations for all demands listed above and required fire flow as per Fire Underwriter Surveys - See attached.

Let me know if you require any further information to complete the boundary condition request.

Thank you,

Nicole Wells, C.E.T.
Project Manager

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
705-719-4785	905-597-5572	226-256-2957

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Appendix B

Sanitary Servicing Calculations

1480 Richmond Road, Ottawa
Sanitary Flow Calculations

Extraneous Flow	=	0.33 L/ha/s	(As per Sewer Design Guideline, City of Ottawa, December 2025)	
Land Are	=	0.26 ha		
Extraneous Flow	=	0.33	x	0.26
	=	0.08 L/sec		

Existing Condition:

Sanitary Flow	=	1.98 L/sec	(Based on the maximum water demand)	
Maximum Sanitary Peak Flow	=	Maximum water flow	+	Extraneous Flow
	=	1.98	+	0.08
	=	2.07 L/sec		

Proposed Condition:

Sanitary Flow	=	2.52 L/sec	(Based on the maximum water demand)	
Maximum Sanitary Peak Flow	=	Maximum water flow	+	Extraneous Flow
	=	2.52	+	0.08
	=	2.60 L/sec		

The private sanitary service is connected to an existing 200 mm diameter sanitary sewer with a slope of 0.89% and a total capacity of 30.95 L/s. The proposed development will result in an additional sanitary flow of 0.53 L/s, representing approximately 1.74% of the existing sewer's total capacity. Therefore, the existing sanitary sewer is expected to have sufficient capacity to accommodate the proposed development's additional sanitary flows.

Appendix C

Stormwater Management Calculations

1480 Richmond Road, Ottawa
Calculation of Runoff Coefficients

Runoff Coefficient	=	0.20	0.90	0.90	0.80	0.90		Weighted
Surface Cover	=	Grass	Asphalt	Building	Gravel	Conc.		Runoff Coefficient
Pre-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
101	853	44	750	0	0	59		0.86
Pre Total	853	44	750	0	0	59		0.50
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
201	685	151	419	0	0	115		0.75
202	168	0	168	0	0	0		0.90
Post Total	853	151	587	0	0	115		0.78

Note: Note: In accordance with the City of Ottawa guidelines, a pre-development runoff coefficient of 0.50, or the existing runoff coefficient (0.86) whichever is lower, has been adopted for the pre-development design. Accordingly, a runoff coefficient of 0.50 has been used for the SWM calculations.

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1480 Richmond Road, Ottawa
Pre-Development OTTHYMO Parameters

Drainage ID	**=**	**101**	
Asphalt Area	=	750	m^2
Rooftop Area	=	0	m^2
Other Impervious area	=	59	m^2
Total Impervious Area	=	809	m^2
	=	0.08	ha
Total Catchment Area	=	853	m^2
	=	0.09	ha
Total % of Impervious	=	0.08	ha
		0.09	ha
Total % of Impervious	**=**	**95%**	

Note:As per the City of Ottawa's guidelines, a maximum pre-development runoff coefficient of 0.50 is applied. Accordingly, an allowable imperviousness of 50% has been considered for the calculation of allowable runoff flows.

Total % of Impervious (Allowable)	**=**	**50%**

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Post-Development OTTHYMO Parameters

Drainage ID	**=**	**201**	
Asphalt Area	=	419	m^2
Rooftop Area	=	0	m^2
Other Impervious area	=	115	m^2
Area of Grass	=	151	m^2
Total Impervious Area	=	534	m^2
	=	0.05	ha
Total Catchment Area	=	685	m^2
	=	0.07	ha
Total % of Impervious	=	0.05	ha
		0.07	ha
Total % of Impervious	**=**	**78%**	
Drainage ID	**=**	**202**	
Asphalt Area	=	168	m^2
Rooftop Area	=	0	m^2
Other Impervious area	=	0	m^2
Area of Grass	=	0	m^2
Total Impervious Area	=	168	m^2
	=	0.02	ha
Total Catchment Area	=	168	m^2
	=	0.02	ha
Total % of Impervious	=	0.02	ha
		0.02	ha
Total % of Impervious	**=**	**100%**	(Considered 99% due to model restrictions)

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Stage-Storage-Discharge Table

Elevation (m)	Volume (m^3)	Cum. Vol. (m^3)	Orifice Head (m)	Orifice Flow (L/s)	Weir Head (m)	Weir Flow (L/s)	Total Flow (L/s)
73.76	0	0	0	0.8	0	0	0.8
73.80	1.3	1	0.0	3.2	0	0	3.2
73.85	1.3	3	0.1	4.8	0	0	4.8
73.90	1.3	4	0.1	5.9	0	0	5.9
73.95	1.3	5	0.2	6.9	0	0	6.9
74.00	1.3	7	0.2	7.7	0	0	7.7
74.05	1.3	8	0.3	8.5	0	0	8.5
74.10	1.3	9	0.3	9.2	0	0	9.2
74.15	1.3	10	0.4	9.8	0	0	9.8
74.20	1.3	12	0.4	10.4	0	0	10.4
74.25	1.3	13	0.5	11.0	0	0	11.0
74.30	1.3	14	0.5	11.5	0	0	11.5
74.35	1.3	16	0.6	12.1	0	0	12.1
74.40	1.3	17	0.6	12.5	0	0	12.5
74.45	1.3	18	0.7	13.0	0	0	13.0
74.50	0.6	19	0.7	13.5	0	0	13.5
74.55	0	19	0.8	13.9	0	0	13.9
74.60	0	19	0.8	14.4	0	0	14.4
74.65	0	19	0.9	14.8	0	0	14.8
74.70	0	19	0.9	15.2	0	0	15.2
74.75	0	19	1.0	15.6	0	0	15.6
74.80	0	19	1.0	16.0	0	0	16.0
74.85	0	19	1.1	16.4	0	0	16.4
74.90	0	19	1.1	16.7	0	0	16.7
74.95	0	19	1.2	17.1	0	0	17.1
75.00	0	19	1.2	17.5	0	0	17.5
75.05	0	19	1.3	17.8	0	0	17.8
75.10	0	19	1.3	18.1	0	0	18.1
75.15	0	19	1.4	18.5	0	0	18.5
75.20	0	19	1.4	18.8	0	0	18.8
75.25	0	19	1.5	19.1	0	0	19.1
75.30	0	19	1.5	19.4	0	0	19.4
75.35	0	19	1.6	19.8	0	0	19.8
75.40	0	19	1.6	20.1	0	0	20.1
75.45	0	19	1.7	20.4	0	0	20.4
75.50	0	19	1.7	20.7	0	0	20.7

Orifice Tube	
Diameter	75 mm
Invert Elevation	73.72
Orifice Constant	0.80
Orifice Centroid	73.76
Orifice Flow Formula	0.80π(D/2,000)2 x (2x9.81xH)0.5

Emergency Overflow Weir	
Width	1.00 m
Invert of Weir	75.65 m
Weir Flow Formula	$1.7WH^{1.5}$

1480 Richmond Road, Ottawa
Calculation of Runoff Coefficients - Pipe Sheet (Existing Condition)

Runoff Coefficient	=	0.20	0.90	0.90	0.80	0.90		Weighted
Surface Cover	=	Grass	Asphalt	Building	Gravel	Conc.		Runoff Coefficient
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	347	0	347	0	0	0		0.90
2	1868	38	1830	0	0	0		0.89
3	1457	44	1413	0	0	0		0.88
Post Total	3672	82	3590	0	0	0		0.88

Q = 0.0028*C*I*A (m^3/s)
C = Runoff Coefficient
I = Rainfall Intensity = $A/(Time+B)^C$
A = Area (ha)

1480 Richmond Road, Ottawa
Storm Sewer Design Sheet
5-Year Storm Event (Existing Condition)

DATE: 13-Nov-26
FILE: 26047
CONTRACT/PROJECT: 1480 Richmond Road

Areas	Manhole		Length	Increment			Total	Flow Time (min)		I	Total Q	S	D	Q Full	V Full	% Full
	From	To	(m)	C	A	CA	CA	TO	IN	(mm/h)	(L/s)	(%)	(mm)	(L/s)	(m/s)	
1	Ex. CB	Ex. CB3	19.5	0.90	0.03	0.03	0.03	10.00	0.31	104.19	9.0	1.00	200	32.8	1.04	27.6%
-	Ex. CB3	Ex. CB2	2.5	-	-	-	0.03	10.31	0.04	102.58	8.9	1.00	200	32.8	1.04	27.1%
3	CB1	MH3	8.3	0.88	0.15	0.13	0.13	10.00	0.08	104.19	37.1	2.53	200	52.2	1.66	71.0%
2	Ex. CB2	MH3	42.6	0.89	0.19	0.17	0.32	10.35	0.48	102.38	92.4	2.00	200	46.4	1.48	199.1%

1480 Richmond Road, Ottawa
Calculation of Runoff Coefficients - Pipe Sheet (Proposed Condition)

Runoff Coefficient	=	0.20	0.90	0.90	0.80	0.90		Weighted
Surface Cover	=	Grass	Asphalt	Building	Gravel	Conc.		Runoff Coefficient
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	347	0	347	0	0	0		0.90
2	1868	38	1830	0	0	0		0.89
3	292	43	205	0	0	44		0.80
4	393	108	87	0	0	198		0.71
5	772	0	772	0	0	0		0.90
Post Total	3672	189	3241	0	0	242		0.86

Q = 0.0028*C*I*A (m^3/s)

C = Runoff Coefficient

I = Rainfall Intensity = $A/(Time+B)^C$

A = Area (ha)

1480 Richmond Road, Ottawa
Storm Sewer Design Sheet
5-Year Storm Event

DATE: 13-Nov-26

FILE: 26047

CONTRACT/PROJECT: 1480 Richmond Road

Areas	Manhole		Length	Increment			Total	Flow Time (min)		I	Total Q	S	D	Q Full	V Full	% Full
	From	To	(m)	C	A	CA	CA	TO	IN	(mm/h)	(L/s)	(%)	(mm)	(L/s)	(m/s)	
1	Ex. CB	Ex. CB3	19.5	0.90	0.03	0.03	0.03	10.00	0.18	104.19	9.0	1.00	450	285.1	1.79	3.2%
-	Ex. CB3	Ex. CB2	2.5	-	-	-	0.03	10.18	0.04	103.25	9.0	1.00	200	32.8	1.04	27.3%
2	Ex. CB2	MH1	42.6	0.89	0.19	0.17	0.20	10.22	0.48	103.04	56.3	2.00	200	46.4	1.48	121.3%
3	-	CBMH1	2.6	0.80	0.03	0.02	0.02	10.00	0.03	104.19	6.7	1.00	300	96.7	1.37	7.0%
-	CBMH1	CBMH2	8.2	-	-	-	0.02	10.03	0.14	104.03	6.7	0.50	300	68.4	0.97	9.8%
4	CBMH2	MH1	8.2	0.71	0.04	0.03	0.05	10.17	0.14	103.29	11.28 *	0.50	300	68.4	0.97	16.5%
5	Ex. CB1	MH1	10.1	0.90	0.08	0.07	0.07	10.00	0.17	104.19	20.1	0.50	300	68.4	0.97	29.4%
-	MH1	Ex. MH3	9.4	-	-	-	0.27	10.70	0.16	100.63	85.68*	0.50	300	68.4	0.97	125.3%

Note: * indicates orifice plate flow

1. Flows from CBMH2 to MH1, denoted by an asterisk (*), represent the controlled 100-year Chicago storm flows, regulated by the proposed orifice tube.
2. Flows from MH1 to Ex. MH3 includes Area 2 and Area 5 and the controlled flows from Area 4 is directly added into the total flow in order to reflect the orifice effect on total flow.
3. The overall storm flow leaving from site is decreased compared to pre-development condition though, it exceeds the existing storm structure capapcity.

1480 Richmond Road, Ottawa
Catchbasin Inlet Capacity and Blockage

Q = 0.0028*C*I*A (m^3/s)

C = Runoff Coefficient

I = Rainfall Intensity = $A/(Time+B)^C$

A = Area (ha)

City of Ottawa

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
100 Years	1735.7	6.014	0.82

DATE:	13-Nov-26
FILE:	26047
CONTRACT/PROJECT:	1480 Richmond Rd

Area	Catchbasin/Manhole	Increment			Flow Time (min)	I (mm/h)	Q (m^3/s)	Design Ponding Depth (m)	Inlet Capacity at Design ponding depth (m^3/s)	Allowable Blockage (%)
		C	A	CA						
3	CBMH1	0.80	0.03	0.02	10.00	178.56	0.01	0.15	0.12 *	90%
4	CBMH2	0.71	0.04	0.03	10.00	178.56	0.01	0.15	0.12 *	88%

A2/ Grate Inlet Capacity Curves (In Sag)

A2.1/ Data for Common Curve for Single Grates DD-713-A, DD-713-B, DD-705, and KWC; Common Curve for Twin Inlets DD-713-A, DD-713-B, and DD-705

Grates: DD-713-A, DD-713-B, DD-705 (Single and Twin), KWC

Curb & Gutter: Type B

Depth of Ponding: 0.0 to 0.30 m

Crossfall: 0.02 to 0.06 m/m (results for various crossfalls were combined together)

Source of Data: Interpolations and Extrapolations of Experimental Data

Graphical Presentation: Figures 24-26

Depth of Ponding (m)	Inlet Capacity in Sag (m^3/s)		
	DD-713-A DD-713-B DD-705	Twin DD-713-A DD-713-B DD-705	KWC
0.00	0.0000	0.0000	0.0000
0.01	0.0004	0.0012	0.0004
0.02	0.0017	0.0028	0.0017
0.03	0.0040	0.0050	0.0040
0.04	0.0070	0.0098	0.0070
0.05	0.0110	0 0158	0.0110
0.06	0.0171	0 0256	0.0171
0.07	0.0250	0.0365	0.0250
0.08	0.0347	0.0530	0.0347
0 09	0.0464	0.0709	0.0464
0.10	0.0600	0.0908	0.0600
0.11	0.0726	0 1083	0.0726
0.12	0.0853	0.1256	0.0855
0.13	0.0971	0.1415	0 0975
0.14	0.1082	0.1548	0.1090
0.15	0 1184	0.1683	0.1220
0.16	0.1278	0.1820	0.1337
0.17	0.1363	0.1931	0.1444
0.18	0.1441	0.2111	0.1544
0.19	0.1510	0.2280	0 1638
0.20	0 1569	0.2440	0.1725
0.22	0.1671	0.2749	0.1891
0.24	0.1768	0.3067	0.2031
0.26	0.1860	0.3395	0.2151
0.28	0.1946	0.3727	0.2255
0.30	0.2027	0.4054	0.2340

1480 Richmond Road, Ottawa
Retention Volume Calculations

As per the Pincrest Creek SWM guideline, the first 10 mm of runoff is to be retained on site.

The required volume can be calculated as below:

Required Volume	=	Total Site Area (m^2)		x	Rainfall Event (m)	
	=	853		x	0.01	
	=	8.5	m^3			
Volume Control provided by Permeable Pavers	=	Area draining through Permeable Pavers			x	Rainfall event
	=	292			x	0.0250
	=	7.3	m^3			
Volume Control provided by bioretention infiltration trench	=	Landscape area draining through bioretention trench			x	Rainfall event
	=	76			x	0.0250
	=	1.9	m^3			
Total Volume Control	=	7.3	+		1.9	
	=	**9.2**	**m^3**			

9.9 m^3 of retention/detention is provided which exceeds the 8.5 m^3 requirement.

Appendix D

Allowable and Pre-Development Visual OTTHYMO Modeling



Name	Pre-development (IMP. - 95%)
Runoff AREA [ha]	0.090000
Runoff Peak [m^3/s]	0.018290

1



Name	Allowable (IMP. - 50%)
Runoff AREA [ha]	0.090000
Runoff Peak [m^3/s]	0.009948

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PRE-DEVELOPMENT CONDITION (95% IMPERVIOUSNESS)

DETAILED OUTPUT

```
**********************************
** SIMULATION:01- 2yr-4hr Chicago **
**********************************
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.09
|ID= 1 DT= 1.0 min |   Total Imp(%)=  95.00   Dir. Conn.(%)=  95.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.09         0.00
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      24.49        15.00
     Mannings n             =    0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
0.017	2.05	1.017	18.21	2.017	5.10	3.02	2.46
0.033	2.05	1.033	18.21	2.033	5.10	3.03	2.46
0.050	2.05	1.050	18.21	2.050	5.10	3.05	2.46
0.067	2.05	1.067	18.21	2.067	5.10	3.07	2.46
0.083	2.05	1.083	18.21	2.083	5.10	3.08	2.46
0.100	2.05	1.100	18.21	2.100	5.10	3.10	2.46
0.117	2.05	1.117	18.21	2.117	5.10	3.12	2.46
0.133	2.05	1.133	18.21	2.133	5.10	3.13	2.46
0.150	2.05	1.150	18.21	2.150	5.10	3.15	2.46
0.167	2.05	1.167	18.21	2.167	5.10	3.17	2.46
0.183	2.37	1.183	76.80	2.183	4.29	3.18	2.28
0.200	2.37	1.200	76.80	2.200	4.29	3.20	2.28
0.217	2.37	1.217	76.80	2.217	4.29	3.22	2.28
0.233	2.37	1.233	76.80	2.233	4.29	3.23	2.28
0.250	2.37	1.250	76.80	2.250	4.29	3.25	2.28
0.267	2.37	1.267	76.80	2.267	4.29	3.27	2.28
0.283	2.37	1.283	76.80	2.283	4.29	3.28	2.28
0.300	2.37	1.300	76.80	2.300	4.29	3.30	2.28
0.317	2.37	1.317	76.80	2.317	4.29	3.32	2.28
0.333	2.37	1.333	76.80	2.333	4.29	3.33	2.28
0.350	2.81	1.350	24.08	2.350	3.72	3.35	2.12
0.367	2.81	1.367	24.08	2.367	3.72	3.37	2.12
0.383	2.81	1.383	24.08	2.383	3.72	3.38	2.12
0.400	2.81	1.400	24.08	2.400	3.72	3.40	2.12
0.417	2.81	1.417	24.08	2.417	3.72	3.42	2.12
0.433	2.81	1.433	24.08	2.433	3.72	3.43	2.12
0.450	2.81	1.450	24.08	2.450	3.72	3.45	2.12
0.467	2.81	1.467	24.08	2.467	3.72	3.47	2.12
0.483	2.81	1.483	24.08	2.483	3.72	3.48	2.12
0.500	2.81	1.500	24.08	2.500	3.72	3.50	2.12
0.517	3.50	1.517	12.36	2.517	3.29	3.52	1.99
0.533	3.50	1.533	12.36	2.533	3.29	3.53	1.99
0.550	3.50	1.550	12.36	2.550	3.29	3.55	1.99
0.567	3.50	1.567	12.36	2.567	3.29	3.57	1.99
0.583	3.50	1.583	12.36	2.583	3.29	3.58	1.99
0.600	3.50	1.600	12.36	2.600	3.29	3.60	1.99
0.617	3.50	1.617	12.36	2.617	3.29	3.62	1.99
0.633	3.50	1.633	12.36	2.633	3.29	3.63	1.99
0.650	3.50	1.650	12.36	2.650	3.29	3.65	1.99
0.667	3.50	1.667	12.36	2.667	3.29	3.67	1.99
0.683	4.69	1.683	8.32	2.683	2.95	3.68	1.87
0.700	4.69	1.700	8.32	2.700	2.95	3.70	1.87
0.717	4.69	1.717	8.32	2.717	2.95	3.72	1.87
0.733	4.69	1.733	8.32	2.733	2.95	3.73	1.87
0.750	4.69	1.750	8.32	2.750	2.95	3.75	1.87
0.767	4.69	1.767	8.32	2.767	2.95	3.77	1.87
0.783	4.69	1.783	8.32	2.783	2.95	3.78	1.87
0.800	4.69	1.800	8.32	2.800	2.95	3.80	1.87
0.817	4.69	1.817	8.32	2.817	2.95	3.82	1.87
0.833	4.69	1.833	8.32	2.833	2.95	3.83	1.87
0.850	7.31	1.850	6.30	2.850	2.68	3.85	1.77
0.867	7.31	1.867	6.30	2.867	2.68	3.87	1.77
0.883	7.31	1.883	6.30	2.883	2.68	3.88	1.77
0.900	7.31	1.900	6.30	2.900	2.68	3.90	1.77
0.917	7.31	1.917	6.30	2.917	2.68	3.92	1.77
0.933	7.31	1.933	6.30	2.933	2.68	3.93	1.77
0.950	7.31	1.950	6.30	2.950	2.68	3.95	1.77
0.967	7.31	1.967	6.30	2.967	2.68	3.97	1.77
0.983	7.31	1.983	6.30	2.983	2.68	3.98	1.77
1.000	7.31	2.000	6.30	3.000	2.68	4.00	1.77

```
     Max.Eff.Inten.(mm/hr)=      76.80         4.33
               over (min)         5.00         3.00
     Storage Coeff.  (min)=       0.99 (ii)    2.33 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.48         0.44
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.018 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.35          1.33
     RUNOFF VOLUME    (mm)=      31.89         2.65         30.42
     TOTAL RAINFALL   (mm)=      33.89        33.89         33.89
     RUNOFF COEFFICIENT   =       0.94         0.08          0.90

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  47.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
```

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

****
** SIMULATION:02- 5yr-4hr Chicago **
****

CALIB		
STANDHYD (0001)	Area (ha)=	0.09
ID= 1 DT= 1.0 min	Total Imp(%)=	95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.79	1.017	24.69	2.017	6.91	3.02	3.35
0.033	2.79	1.033	24.69	2.033	6.91	3.03	3.35
0.050	2.79	1.050	24.69	2.050	6.91	3.05	3.35
0.067	2.79	1.067	24.69	2.067	6.91	3.07	3.35
0.083	2.79	1.083	24.69	2.083	6.91	3.08	3.35
0.100	2.79	1.100	24.69	2.100	6.91	3.10	3.35
0.117	2.79	1.117	24.69	2.117	6.91	3.12	3.35
0.133	2.79	1.133	24.69	2.133	6.91	3.13	3.35
0.150	2.79	1.150	24.69	2.150	6.91	3.15	3.35
0.167	2.79	1.167	24.69	2.167	6.91	3.17	3.35
0.183	3.22	1.183	105.37	2.183	5.82	3.18	3.10
0.200	3.22	1.200	105.37	2.200	5.82	3.20	3.10
0.217	3.22	1.217	105.37	2.217	5.82	3.22	3.10
0.233	3.22	1.233	105.37	2.233	5.82	3.23	3.10
0.250	3.22	1.250	105.37	2.250	5.82	3.25	3.10
0.267	3.22	1.267	105.37	2.267	5.82	3.27	3.10
0.283	3.22	1.283	105.37	2.283	5.82	3.28	3.10
0.300	3.22	1.300	105.37	2.300	5.82	3.30	3.10
0.317	3.22	1.317	105.37	2.317	5.82	3.32	3.10
0.333	3.22	1.333	105.37	2.333	5.82	3.33	3.10
0.350	3.82	1.350	32.67	2.350	5.05	3.35	2.88
0.367	3.82	1.367	32.66	2.367	5.05	3.37	2.88
0.383	3.82	1.383	32.66	2.383	5.05	3.38	2.88
0.400	3.82	1.400	32.66	2.400	5.05	3.40	2.88
0.417	3.82	1.417	32.66	2.417	5.05	3.42	2.88
0.433	3.82	1.433	32.66	2.433	5.05	3.43	2.88
0.450	3.82	1.450	32.66	2.450	5.05	3.45	2.88
0.467	3.82	1.467	32.66	2.467	5.05	3.47	2.88
0.483	3.82	1.483	32.66	2.483	5.05	3.48	2.88
0.500	3.82	1.500	32.66	2.500	5.05	3.50	2.88
0.517	4.75	1.517	16.75	2.517	4.46	3.52	2.70
0.533	4.75	1.533	16.75	2.533	4.46	3.53	2.70
0.550	4.75	1.550	16.75	2.550	4.46	3.55	2.70
0.567	4.75	1.567	16.75	2.567	4.46	3.57	2.70
0.583	4.75	1.583	16.75	2.583	4.46	3.58	2.70
0.600	4.75	1.600	16.75	2.600	4.46	3.60	2.70
0.617	4.75	1.617	16.75	2.617	4.46	3.62	2.70
0.633	4.75	1.633	16.75	2.633	4.46	3.63	2.70
0.650	4.75	1.650	16.75	2.650	4.46	3.65	2.70
0.667	4.75	1.667	16.75	2.667	4.46	3.67	2.70
0.683	6.36	1.683	11.28	2.683	4.01	3.68	2.54
0.700	6.36	1.700	11.28	2.700	4.01	3.70	2.54
0.717	6.36	1.717	11.28	2.717	4.01	3.72	2.54
0.733	6.36	1.733	11.28	2.733	4.01	3.73	2.54
0.750	6.36	1.750	11.28	2.750	4.01	3.75	2.54
0.767	6.36	1.767	11.28	2.767	4.01	3.77	2.54
0.783	6.36	1.783	11.28	2.783	4.01	3.78	2.54
0.800	6.36	1.800	11.28	2.800	4.01	3.80	2.54
0.817	6.36	1.817	11.28	2.817	4.01	3.82	2.54
0.833	6.36	1.833	11.28	2.833	4.01	3.83	2.54
0.850	9.90	1.850	8.55	2.850	3.65	3.85	2.40
0.867	9.90	1.867	8.55	2.867	3.65	3.87	2.40
0.883	9.90	1.883	8.55	2.883	3.65	3.88	2.40
0.900	9.90	1.900	8.55	2.900	3.65	3.90	2.40
0.917	9.90	1.917	8.55	2.917	3.65	3.92	2.40
0.933	9.90	1.933	8.55	2.933	3.65	3.93	2.40
0.950	9.90	1.950	8.55	2.950	3.65	3.95	2.40
0.967	9.90	1.967	8.55	2.967	3.65	3.97	2.40
0.983	9.90	1.983	8.55	2.983	3.65	3.98	2.40
1.000	9.90	2.000	8.55	3.000	3.65	4.00	2.40

Max.Eff.Inten.(mm/hr)=		105.37	8.97		
over (min)		5.00	3.00		
Storage Coeff. (min)=		0.87 (ii)	2.06 (ii)		
Unit Hyd. Tpeak (min)=		5.00	3.00		
Unit Hyd. peak (cms)=		0.49	0.47		
				TOTALS	
PEAK FLOW	(cms)=	0.03	0.00	0.025	(iii)
TIME TO PEAK	(hrs)=	1.33	1.35	1.33	
RUNOFF VOLUME	(mm)=	44.17	5.17	42.21	
TOTAL RAINFALL	(mm)=	46.17	46.17	46.17	
RUNOFF COEFFICIENT	=	0.96	0.11	0.91	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:03- 10yr-4hr Chicago **
****

CALIB	
STANDHYD (0001)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.97	1.017	27.50	2.017	7.48	3.02	3.57
0.033	2.97	1.033	27.50	2.033	7.48	3.03	3.57
0.050	2.97	1.050	27.50	2.050	7.48	3.05	3.57
0.067	2.97	1.067	27.50	2.067	7.48	3.07	3.57
0.083	2.97	1.083	27.50	2.083	7.48	3.08	3.57
0.100	2.97	1.100	27.50	2.100	7.48	3.10	3.57
0.117	2.97	1.117	27.50	2.117	7.48	3.12	3.57
0.133	2.97	1.133	27.50	2.133	7.48	3.13	3.57
0.150	2.97	1.150	27.50	2.150	7.48	3.15	3.57
0.167	2.97	1.167	27.50	2.167	7.48	3.17	3.57
0.183	3.43	1.183	120.82	2.183	6.28	3.18	3.30
0.200	3.43	1.200	120.82	2.200	6.28	3.20	3.30
0.217	3.43	1.217	120.82	2.217	6.28	3.22	3.30
0.233	3.43	1.233	120.82	2.233	6.28	3.23	3.30
0.250	3.43	1.250	120.82	2.250	6.28	3.25	3.30
0.267	3.43	1.267	120.82	2.267	6.28	3.27	3.30
0.283	3.43	1.283	120.82	2.283	6.28	3.28	3.30
0.300	3.43	1.300	120.82	2.300	6.28	3.30	3.30
0.317	3.43	1.317	120.82	2.317	6.28	3.32	3.30
0.333	3.43	1.333	120.82	2.333	6.28	3.33	3.30
0.350	4.09	1.350	36.56	2.350	5.43	3.35	3.07
0.367	4.09	1.367	36.56	2.367	5.43	3.37	3.07
0.383	4.09	1.383	36.56	2.383	5.43	3.38	3.07
0.400	4.09	1.400	36.56	2.400	5.43	3.40	3.07
0.417	4.09	1.417	36.56	2.417	5.43	3.42	3.07
0.433	4.09	1.433	36.56	2.433	5.43	3.43	3.07
0.450	4.09	1.450	36.56	2.450	5.43	3.45	3.07
0.467	4.09	1.467	36.56	2.467	5.43	3.47	3.07
0.483	4.09	1.483	36.56	2.483	5.43	3.48	3.07
0.500	4.09	1.500	36.56	2.500	5.43	3.50	3.07
0.517	5.10	1.517	18.48	2.517	4.79	3.52	2.87
0.533	5.10	1.533	18.48	2.533	4.79	3.53	2.87
0.550	5.10	1.550	18.48	2.550	4.79	3.55	2.87
0.567	5.10	1.567	18.48	2.567	4.79	3.57	2.87
0.583	5.10	1.583	18.48	2.583	4.79	3.58	2.87
0.600	5.10	1.600	18.48	2.600	4.79	3.60	2.87
0.617	5.10	1.617	18.48	2.617	4.79	3.62	2.87
0.633	5.10	1.633	18.48	2.633	4.79	3.63	2.87
0.650	5.10	1.650	18.48	2.650	4.79	3.65	2.87
0.667	5.10	1.667	18.48	2.667	4.79	3.67	2.87
0.683	6.87	1.683	12.34	2.683	4.29	3.68	2.70
0.700	6.87	1.700	12.34	2.700	4.29	3.70	2.70
0.717	6.87	1.717	12.34	2.717	4.29	3.72	2.70
0.733	6.87	1.733	12.34	2.733	4.29	3.73	2.70
0.750	6.87	1.750	12.34	2.750	4.29	3.75	2.70
0.767	6.87	1.767	12.34	2.767	4.29	3.77	2.70
0.783	6.87	1.783	12.34	2.783	4.29	3.78	2.70
0.800	6.87	1.800	12.34	2.800	4.29	3.80	2.70
0.817	6.87	1.817	12.34	2.817	4.29	3.82	2.70
0.833	6.87	1.833	12.34	2.833	4.29	3.83	2.70
0.850	10.80	1.850	9.29	2.850	3.90	3.85	2.55
0.867	10.80	1.867	9.29	2.867	3.90	3.87	2.55
0.883	10.80	1.883	9.29	2.883	3.90	3.88	2.55
0.900	10.80	1.900	9.29	2.900	3.90	3.90	2.55
0.917	10.80	1.917	9.29	2.917	3.90	3.92	2.55
0.933	10.80	1.933	9.29	2.933	3.90	3.93	2.55
0.950	10.80	1.950	9.29	2.950	3.90	3.95	2.55
0.967	10.80	1.967	9.29	2.967	3.90	3.97	2.55
0.983	10.80	1.983	9.29	2.983	3.90	3.98	2.55
1.000	10.80	2.000	9.29	3.000	3.90	4.00	2.55

				TOTALS
Max.Eff.Inten.(mm/hr)=		120.82	11.82	
over (min)		5.00	2.00	
Storage Coeff. (min)=		0.83 (ii)	1.95 (ii)	
Unit Hyd. Tpeak (min)=		5.00	2.00	
Unit Hyd. peak (cms)=		0.50	0.57	
PEAK FLOW	(cms)=	0.03	0.00	0.029 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	49.41	6.47	47.26
TOTAL RAINFALL	(mm)=	51.41	51.41	51.41
RUNOFF COEFFICIENT	=	0.96	0.13	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:04- 25yr-4hr Chicago **
****

CALIB	
STANDHYD (0001)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.55	1.017	32.87	2.017	8.94	3.02	4.27
0.033	3.55	1.033	32.87	2.033	8.94	3.03	4.27
0.050	3.55	1.050	32.87	2.050	8.94	3.05	4.27
0.067	3.55	1.067	32.87	2.067	8.94	3.07	4.27
0.083	3.55	1.083	32.87	2.083	8.94	3.08	4.27
0.100	3.55	1.100	32.87	2.100	8.94	3.10	4.27
0.117	3.55	1.117	32.87	2.117	8.94	3.12	4.27
0.133	3.55	1.133	32.87	2.133	8.94	3.13	4.27
0.150	3.55	1.150	32.87	2.150	8.94	3.15	4.27
0.167	3.55	1.167	32.87	2.167	8.94	3.17	4.27
0.183	4.10	1.183	144.27	2.183	7.51	3.18	3.94
0.200	4.10	1.200	144.28	2.200	7.51	3.20	3.94
0.217	4.10	1.217	144.28	2.217	7.51	3.22	3.94
0.233	4.10	1.233	144.28	2.233	7.51	3.23	3.94
0.250	4.10	1.250	144.28	2.250	7.51	3.25	3.94
0.267	4.10	1.267	144.28	2.267	7.51	3.27	3.94
0.283	4.10	1.283	144.28	2.283	7.51	3.28	3.94
0.300	4.10	1.300	144.28	2.300	7.51	3.30	3.94
0.317	4.10	1.317	144.28	2.317	7.51	3.32	3.94
0.333	4.10	1.333	144.28	2.333	7.51	3.33	3.94
0.350	4.89	1.350	43.70	2.350	6.49	3.35	3.67
0.367	4.89	1.367	43.69	2.367	6.49	3.37	3.67
0.383	4.89	1.383	43.69	2.383	6.49	3.38	3.67
0.400	4.89	1.400	43.69	2.400	6.49	3.40	3.67
0.417	4.89	1.417	43.69	2.417	6.49	3.42	3.67
0.433	4.89	1.433	43.69	2.433	6.49	3.43	3.67
0.450	4.89	1.450	43.69	2.450	6.49	3.45	3.67
0.467	4.89	1.467	43.69	2.467	6.49	3.47	3.67
0.483	4.89	1.483	43.69	2.483	6.49	3.48	3.67
0.500	4.89	1.500	43.69	2.500	6.49	3.50	3.67
0.517	6.10	1.517	22.09	2.517	5.72	3.52	3.43
0.533	6.10	1.533	22.09	2.533	5.72	3.53	3.43
0.550	6.10	1.550	22.09	2.550	5.72	3.55	3.43
0.567	6.10	1.567	22.09	2.567	5.72	3.57	3.43
0.583	6.10	1.583	22.09	2.583	5.72	3.58	3.43
0.600	6.10	1.600	22.09	2.600	5.72	3.60	3.43
0.617	6.10	1.617	22.09	2.617	5.72	3.62	3.43
0.633	6.10	1.633	22.09	2.633	5.72	3.63	3.43
0.650	6.10	1.650	22.09	2.650	5.72	3.65	3.43
0.667	6.10	1.667	22.09	2.667	5.72	3.67	3.43
0.683	8.21	1.683	14.75	2.683	5.13	3.68	3.23
0.700	8.21	1.700	14.75	2.700	5.13	3.70	3.23
0.717	8.21	1.717	14.75	2.717	5.13	3.72	3.23
0.733	8.21	1.733	14.75	2.733	5.13	3.73	3.23
0.750	8.21	1.750	14.75	2.750	5.13	3.75	3.23
0.767	8.21	1.767	14.75	2.767	5.13	3.77	3.23
0.783	8.21	1.783	14.75	2.783	5.13	3.78	3.23
0.800	8.21	1.800	14.75	2.800	5.13	3.80	3.23
0.817	8.21	1.817	14.75	2.817	5.13	3.82	3.23
0.833	8.21	1.833	14.75	2.833	5.13	3.83	3.23
0.850	12.91	1.850	11.11	2.850	4.66	3.85	3.05
0.867	12.91	1.867	11.11	2.867	4.66	3.87	3.05
0.883	12.91	1.883	11.11	2.883	4.66	3.88	3.05
0.900	12.91	1.900	11.11	2.900	4.66	3.90	3.05
0.917	12.91	1.917	11.11	2.917	4.66	3.92	3.05
0.933	12.91	1.933	11.11	2.933	4.66	3.93	3.05
0.950	12.91	1.950	11.11	2.950	4.66	3.95	3.05
0.967	12.91	1.967	11.11	2.967	4.66	3.97	3.05
0.983	12.91	1.983	11.11	2.983	4.66	3.98	3.05
1.000	12.91	2.000	11.11	3.000	4.66	4.00	3.05

Max.Eff.Inten.(mm/hr)=		144.28	17.32	
over (min)		5.00	2.00	
Storage Coeff. (min)=		0.77 (ii)	1.81 (ii)	
Unit Hyd. Tpeak (min)=		5.00	2.00	
Unit Hyd. peak (cms)=		0.50	0.59	
				TOTALS
PEAK FLOW	(cms)=	0.03	0.00	0.035 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	59.43	9.29	56.91

TOTAL RAINFALL (mm)=	61.43	61.43	61.43
RUNOFF COEFFICIENT =	0.97	0.15	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:05- 50yr-4hr Chicago **
****

CALIB	STANDHYD (0001)	Area (ha)= 0.09	Total Imp(%)= 95.00	Dir. Conn.(%)= 95.00
ID= 1 DT= 1.0 min				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.97	1.017	36.76	2.017	10.00	3.02	4.77
0.033	3.97	1.033	36.76	2.033	10.00	3.03	4.77
0.050	3.97	1.050	36.76	2.050	10.00	3.05	4.77
0.067	3.97	1.067	36.76	2.067	10.00	3.07	4.77
0.083	3.97	1.083	36.76	2.083	10.00	3.08	4.77
0.100	3.97	1.100	36.76	2.100	10.00	3.10	4.77
0.117	3.97	1.117	36.76	2.117	10.00	3.12	4.77
0.133	3.97	1.133	36.76	2.133	10.00	3.13	4.77
0.150	3.97	1.150	36.76	2.150	10.00	3.15	4.77
0.167	3.97	1.167	36.76	2.167	10.00	3.17	4.77
0.183	4.59	1.183	161.50	2.183	8.40	3.18	4.41
0.200	4.59	1.200	161.50	2.200	8.40	3.20	4.41
0.217	4.59	1.217	161.50	2.217	8.40	3.22	4.41
0.233	4.59	1.233	161.50	2.233	8.40	3.23	4.41
0.250	4.59	1.250	161.50	2.250	8.40	3.25	4.41
0.267	4.59	1.267	161.50	2.267	8.40	3.27	4.41
0.283	4.59	1.283	161.50	2.283	8.40	3.28	4.41
0.300	4.59	1.300	161.50	2.300	8.40	3.30	4.41
0.317	4.59	1.317	161.50	2.317	8.40	3.32	4.41
0.333	4.59	1.333	161.50	2.333	8.40	3.33	4.41
0.350	5.47	1.350	48.87	2.350	7.26	3.35	4.10
0.367	5.47	1.367	48.87	2.367	7.26	3.37	4.10
0.383	5.47	1.383	48.87	2.383	7.26	3.38	4.10
0.400	5.47	1.400	48.87	2.400	7.26	3.40	4.10
0.417	5.47	1.417	48.87	2.417	7.26	3.42	4.10
0.433	5.47	1.433	48.87	2.433	7.26	3.43	4.10
0.450	5.47	1.450	48.87	2.450	7.26	3.45	4.10
0.467	5.47	1.467	48.87	2.467	7.26	3.47	4.10
0.483	5.47	1.483	48.87	2.483	7.26	3.48	4.10
0.500	5.47	1.500	48.87	2.500	7.26	3.50	4.10
0.517	6.82	1.517	24.70	2.517	6.40	3.52	3.84
0.533	6.82	1.533	24.70	2.533	6.40	3.53	3.84
0.550	6.82	1.550	24.70	2.550	6.40	3.55	3.84
0.567	6.82	1.567	24.70	2.567	6.40	3.57	3.84
0.583	6.82	1.583	24.70	2.583	6.40	3.58	3.84
0.600	6.82	1.600	24.70	2.600	6.40	3.60	3.84
0.617	6.82	1.617	24.70	2.617	6.40	3.62	3.84
0.633	6.82	1.633	24.70	2.633	6.40	3.63	3.84
0.650	6.82	1.650	24.70	2.650	6.40	3.65	3.84
0.667	6.82	1.667	24.70	2.667	6.40	3.67	3.84
0.683	9.19	1.683	16.49	2.683	5.74	3.68	3.61
0.700	9.19	1.700	16.49	2.700	5.74	3.70	3.61
0.717	9.19	1.717	16.49	2.717	5.74	3.72	3.61
0.733	9.19	1.733	16.49	2.733	5.74	3.73	3.61
0.750	9.19	1.750	16.49	2.750	5.74	3.75	3.61
0.767	9.19	1.767	16.49	2.767	5.74	3.77	3.61
0.783	9.19	1.783	16.49	2.783	5.74	3.78	3.61
0.800	9.19	1.800	16.49	2.800	5.74	3.80	3.61
0.817	9.19	1.817	16.49	2.817	5.74	3.82	3.61
0.833	9.19	1.833	16.49	2.833	5.74	3.83	3.61
0.850	14.44	1.850	12.42	2.850	5.21	3.85	3.41
0.867	14.44	1.867	12.42	2.867	5.21	3.87	3.41
0.883	14.44	1.883	12.42	2.883	5.21	3.88	3.41
0.900	14.44	1.900	12.42	2.900	5.21	3.90	3.41
0.917	14.44	1.917	12.42	2.917	5.21	3.92	3.41
0.933	14.44	1.933	12.42	2.933	5.21	3.93	3.41
0.950	14.44	1.950	12.42	2.950	5.21	3.95	3.41
0.967	14.44	1.967	12.42	2.967	5.21	3.97	3.41
0.983	14.44	1.983	12.42	2.983	5.21	3.98	3.41
1.000	14.44	2.000	12.42	3.000	5.21	4.00	3.41

Max.Eff.Inten.(mm/hr)=	161.50	21.95	
over (min)	5.00	2.00	
Storage Coeff. (min)=	0.74 (ii)	1.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.51	0.61	
			TOTALS

PEAK FLOW (cms)=	0.04	0.00	0.039 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	66.73	11.60	63.96
TOTAL RAINFALL (mm)=	68.73	68.73	68.73
RUNOFF COEFFICIENT =	0.97	0.17	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:06- 100yr-4hr Chicago **
****

CALIB	
STANDHYD (0001)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	4.39	1.017	40.65	2.017	11.06	3.02	5.28
0.033	4.39	1.033	40.65	2.033	11.06	3.03	5.28
0.050	4.39	1.050	40.65	2.050	11.06	3.05	5.28
0.067	4.39	1.067	40.65	2.067	11.06	3.07	5.28
0.083	4.39	1.083	40.65	2.083	11.06	3.08	5.28
0.100	4.39	1.100	40.65	2.100	11.06	3.10	5.28
0.117	4.39	1.117	40.65	2.117	11.06	3.12	5.28
0.133	4.39	1.133	40.65	2.133	11.06	3.13	5.28
0.150	4.39	1.150	40.65	2.150	11.06	3.15	5.28
0.167	4.39	1.167	40.65	2.167	11.06	3.17	5.28
0.183	5.07	1.183	178.59	2.183	9.28	3.18	4.88
0.200	5.07	1.200	178.60	2.200	9.28	3.20	4.88
0.217	5.07	1.217	178.60	2.217	9.28	3.22	4.88
0.233	5.07	1.233	178.60	2.233	9.28	3.23	4.88
0.250	5.07	1.250	178.60	2.250	9.28	3.25	4.88
0.267	5.07	1.267	178.60	2.267	9.28	3.27	4.88
0.283	5.07	1.283	178.60	2.283	9.28	3.28	4.88
0.300	5.07	1.300	178.60	2.300	9.28	3.30	4.88
0.317	5.07	1.317	178.60	2.317	9.28	3.32	4.88
0.333	5.07	1.333	178.60	2.333	9.28	3.33	4.88
0.350	6.05	1.350	54.05	2.350	8.02	3.35	4.54
0.367	6.05	1.367	54.04	2.367	8.02	3.37	4.54
0.383	6.05	1.383	54.04	2.383	8.02	3.38	4.54
0.400	6.05	1.400	54.04	2.400	8.02	3.40	4.54
0.417	6.05	1.417	54.04	2.417	8.02	3.42	4.54
0.433	6.05	1.433	54.04	2.433	8.02	3.43	4.54
0.450	6.05	1.450	54.04	2.450	8.02	3.45	4.54
0.467	6.05	1.467	54.04	2.467	8.02	3.47	4.54
0.483	6.05	1.483	54.04	2.483	8.02	3.48	4.54
0.500	6.05	1.500	54.04	2.500	8.02	3.50	4.54
0.517	7.54	1.517	27.32	2.517	7.08	3.52	4.25
0.533	7.54	1.533	27.31	2.533	7.08	3.53	4.25
0.550	7.54	1.550	27.31	2.550	7.08	3.55	4.25
0.567	7.54	1.567	27.31	2.567	7.08	3.57	4.25
0.583	7.54	1.583	27.31	2.583	7.08	3.58	4.25
0.600	7.54	1.600	27.31	2.600	7.08	3.60	4.25
0.617	7.54	1.617	27.31	2.617	7.08	3.62	4.25
0.633	7.54	1.633	27.31	2.633	7.08	3.63	4.25
0.650	7.54	1.650	27.31	2.650	7.08	3.65	4.25
0.667	7.54	1.667	27.31	2.667	7.08	3.67	4.25
0.683	10.16	1.683	18.24	2.683	6.35	3.68	3.99
0.700	10.16	1.700	18.24	2.700	6.35	3.70	3.99
0.717	10.16	1.717	18.24	2.717	6.35	3.72	3.99
0.733	10.16	1.733	18.24	2.733	6.35	3.73	3.99
0.750	10.16	1.750	18.24	2.750	6.35	3.75	3.99
0.767	10.16	1.767	18.24	2.767	6.35	3.77	3.99
0.783	10.16	1.783	18.24	2.783	6.35	3.78	3.99
0.800	10.16	1.800	18.24	2.800	6.35	3.80	3.99
0.817	10.16	1.817	18.24	2.817	6.35	3.82	3.99
0.833	10.16	1.833	18.24	2.833	6.35	3.83	3.99
0.850	15.97	1.850	13.74	2.850	5.76	3.85	3.77
0.867	15.97	1.867	13.74	2.867	5.76	3.87	3.77
0.883	15.97	1.883	13.74	2.883	5.76	3.88	3.77
0.900	15.97	1.900	13.74	2.900	5.76	3.90	3.77
0.917	15.97	1.917	13.74	2.917	5.76	3.92	3.77
0.933	15.97	1.933	13.74	2.933	5.76	3.93	3.77
0.950	15.97	1.950	13.74	2.950	5.76	3.95	3.77
0.967	15.97	1.967	13.74	2.967	5.76	3.97	3.77
0.983	15.97	1.983	13.74	2.983	5.76	3.98	3.77
1.000	15.97	2.000	13.74	3.000	5.76	4.00	3.77

Max.Eff.Inten.(mm/hr)=	178.60	27.03
over (min)	5.00	2.00
Storage Coeff. (min)=	0.71 (ii)	1.66 (ii)

Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.51	0.63	
			TOTALS
PEAK FLOW (cms)=	0.04	0.00	0.043 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	74.00	14.10	71.00
TOTAL RAINFALL (mm)=	76.00	76.00	76.00
RUNOFF COEFFICIENT =	0.97	0.19	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:07- 2yr-24hr SCS **
****

CALIB		
STANDHYD (0001)	Area (ha)=	0.09
ID= 1 DT= 1.0 min	Total Imp(%)=	95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	0.78	12.150	59.33	18.22	0.87
0.033	0.00	6.100	0.78	12.167	59.33	18.23	0.87
0.050	0.00	6.117	0.78	12.183	59.33	18.25	0.87
0.067	0.00	6.133	0.78	12.200	59.33	18.27	0.87
0.083	0.00	6.150	0.78	12.217	59.33	18.28	0.87
0.100	0.00	6.167	0.78	12.233	59.33	18.30	0.87
0.117	0.00	6.183	0.78	12.250	59.33	18.32	0.87
0.133	0.00	6.200	0.78	12.267	7.03	18.33	0.87
0.150	0.00	6.217	0.78	12.283	6.98	18.35	0.87
0.167	0.00	6.233	0.78	12.300	6.98	18.37	0.87
0.183	0.00	6.250	0.78	12.317	6.98	18.38	0.87
0.200	0.00	6.267	0.87	12.333	6.98	18.40	0.87
0.217	0.00	6.283	0.87	12.350	6.98	18.42	0.87
0.233	0.00	6.300	0.87	12.367	6.98	18.43	0.87
0.250	0.00	6.317	0.87	12.383	6.98	18.45	0.87
0.267	0.53	6.333	0.87	12.400	6.98	18.47	0.87
0.283	0.53	6.350	0.87	12.417	6.98	18.48	0.87
0.300	0.53	6.367	0.87	12.433	6.98	18.50	0.87
0.317	0.53	6.383	0.87	12.450	6.98	18.52	0.87
0.333	0.53	6.400	0.87	12.467	6.98	18.53	0.87
0.350	0.53	6.417	0.87	12.483	6.98	18.55	0.87
0.367	0.53	6.433	0.87	12.500	6.98	18.57	0.87
0.383	0.53	6.450	0.87	12.517	6.98	18.58	0.87
0.400	0.53	6.467	0.87	12.533	6.98	18.60	0.87
0.417	0.53	6.483	0.87	12.550	6.98	18.62	0.87
0.433	0.53	6.500	0.87	12.567	6.98	18.63	0.87
0.450	0.53	6.517	0.87	12.583	6.98	18.65	0.87
0.467	0.53	6.533	0.87	12.600	6.98	18.67	0.87
0.483	0.53	6.550	0.87	12.617	6.98	18.68	0.87
0.500	0.53	6.567	0.87	12.633	6.98	18.70	0.87
0.517	0.53	6.583	0.87	12.650	6.98	18.72	0.87
0.533	0.53	6.600	0.87	12.667	6.98	18.73	0.87
0.550	0.53	6.617	0.87	12.683	6.98	18.75	0.87
0.567	0.53	6.633	0.87	12.700	6.98	18.77	0.87
0.583	0.53	6.650	0.87	12.717	6.98	18.78	0.87
0.600	0.53	6.667	0.87	12.733	6.98	18.80	0.87
0.617	0.53	6.683	0.87	12.750	6.98	18.82	0.87
0.633	0.53	6.700	0.87	12.767	3.59	18.83	0.87
0.650	0.53	6.717	0.87	12.783	3.59	18.85	0.87
0.667	0.53	6.733	0.87	12.800	3.59	18.87	0.87
0.683	0.53	6.750	0.87	12.817	3.59	18.88	0.87
0.700	0.53	6.767	0.87	12.833	3.59	18.90	0.87
0.717	0.53	6.783	0.87	12.850	3.59	18.92	0.87
0.733	0.53	6.800	0.87	12.867	3.59	18.93	0.87
0.750	0.53	6.817	0.87	12.883	3.59	18.95	0.87
0.767	0.53	6.833	0.87	12.900	3.59	18.97	0.87
0.783	0.53	6.850	0.87	12.917	3.59	18.98	0.87
0.800	0.53	6.867	0.87	12.933	3.59	19.00	0.87
0.817	0.53	6.883	0.87	12.950	3.59	19.02	0.87
0.833	0.53	6.900	0.87	12.967	3.59	19.03	0.87
0.850	0.53	6.917	0.87	12.983	3.59	19.05	0.87
0.867	0.53	6.933	0.87	13.000	3.59	19.07	0.87
0.883	0.53	6.950	0.87	13.017	3.59	19.08	0.87
0.900	0.53	6.967	0.87	13.033	3.59	19.10	0.87
0.917	0.53	6.983	0.87	13.050	3.59	19.12	0.87
0.933	0.53	7.000	0.87	13.067	3.59	19.13	0.87
0.950	0.53	7.017	0.87	13.083	3.59	19.15	0.87
0.967	0.53	7.033	0.87	13.100	3.59	19.17	0.87
0.983	0.53	7.050	0.87	13.117	3.59	19.18	0.87
1.000	0.53	7.067	0.87	13.133	3.59	19.20	0.87
1.017	0.53	7.083	0.87	13.150	3.59	19.22	0.87

1.033	0.53	7.100	0.87	13.167	3.59	19.23	0.87
1.050	0.53	7.117	0.87	13.183	3.59	19.25	0.87
1.067	0.53	7.133	0.87	13.200	3.59	19.27	0.87
1.083	0.53	7.150	0.87	13.217	3.59	19.28	0.87
1.100	0.53	7.167	0.87	13.233	3.59	19.30	0.87
1.117	0.53	7.183	0.87	13.250	3.59	19.32	0.87
1.133	0.53	7.200	0.87	13.267	2.62	19.33	0.87
1.150	0.53	7.217	0.87	13.283	2.62	19.35	0.87
1.167	0.53	7.233	0.87	13.300	2.62	19.37	0.87
1.183	0.53	7.250	0.87	13.317	2.62	19.38	0.87
1.200	0.53	7.267	1.07	13.333	2.62	19.40	0.87
1.217	0.53	7.283	1.07	13.350	2.62	19.42	0.87
1.233	0.53	7.300	1.07	13.367	2.62	19.43	0.87
1.250	0.53	7.317	1.07	13.383	2.62	19.45	0.87
1.267	0.53	7.333	1.07	13.400	2.62	19.47	0.87
1.283	0.53	7.350	1.07	13.417	2.62	19.48	0.87
1.300	0.53	7.367	1.07	13.433	2.62	19.50	0.87
1.317	0.53	7.383	1.07	13.450	2.62	19.52	0.87
1.333	0.53	7.400	1.07	13.467	2.62	19.53	0.87
1.350	0.53	7.417	1.07	13.483	2.62	19.55	0.87
1.367	0.53	7.433	1.07	13.500	2.62	19.57	0.87
1.383	0.53	7.450	1.07	13.517	2.62	19.58	0.87
1.400	0.53	7.467	1.07	13.533	2.62	19.60	0.87
1.417	0.53	7.483	1.07	13.550	2.62	19.62	0.87
1.433	0.53	7.500	1.07	13.567	2.62	19.63	0.87
1.450	0.53	7.517	1.07	13.583	2.62	19.65	0.87
1.467	0.53	7.533	1.07	13.600	2.62	19.67	0.87
1.483	0.53	7.550	1.07	13.617	2.62	19.68	0.87
1.500	0.53	7.567	1.07	13.633	2.62	19.70	0.87
1.517	0.53	7.583	1.07	13.650	2.62	19.72	0.87
1.533	0.53	7.600	1.07	13.667	2.62	19.73	0.87
1.550	0.53	7.617	1.07	13.683	2.62	19.75	0.87
1.567	0.53	7.633	1.07	13.700	2.62	19.77	0.87
1.583	0.53	7.650	1.07	13.717	2.62	19.78	0.87
1.600	0.53	7.667	1.07	13.733	2.62	19.80	0.87
1.617	0.53	7.683	1.07	13.750	2.62	19.82	0.87
1.633	0.53	7.700	1.07	13.767	2.04	19.83	0.87
1.650	0.53	7.717	1.07	13.783	2.04	19.85	0.87
1.667	0.53	7.733	1.07	13.800	2.04	19.87	0.87
1.683	0.53	7.750	1.07	13.817	2.04	19.88	0.87
1.700	0.53	7.767	1.07	13.833	2.04	19.90	0.87
1.717	0.53	7.783	1.07	13.850	2.04	19.92	0.87
1.733	0.53	7.800	1.07	13.867	2.04	19.93	0.87
1.750	0.53	7.817	1.07	13.883	2.04	19.95	0.87
1.767	0.53	7.833	1.07	13.900	2.04	19.97	0.87
1.783	0.53	7.850	1.07	13.917	2.04	19.98	0.87
1.800	0.53	7.867	1.07	13.933	2.04	20.00	0.87
1.817	0.53	7.883	1.07	13.950	2.04	20.02	0.87
1.833	0.53	7.900	1.07	13.967	2.04	20.03	0.87
1.850	0.53	7.917	1.07	13.983	2.04	20.05	0.87
1.867	0.53	7.933	1.07	14.000	2.04	20.07	0.87
1.883	0.53	7.950	1.07	14.017	2.04	20.08	0.87
1.900	0.53	7.967	1.07	14.033	2.04	20.10	0.87
1.917	0.53	7.983	1.07	14.050	2.04	20.12	0.87
1.933	0.53	8.000	1.07	14.067	2.04	20.13	0.87
1.950	0.53	8.017	1.07	14.083	2.04	20.15	0.87
1.967	0.53	8.033	1.07	14.100	2.04	20.17	0.87
1.983	0.53	8.050	1.07	14.117	2.04	20.18	0.87
2.000	0.53	8.067	1.07	14.133	2.04	20.20	0.87
2.017	0.53	8.083	1.07	14.150	2.04	20.22	0.87
2.033	0.53	8.100	1.07	14.167	2.04	20.23	0.87
2.050	0.53	8.117	1.07	14.183	2.04	20.25	0.87
2.067	0.53	8.133	1.07	14.200	2.04	20.27	0.58
2.083	0.53	8.150	1.07	14.217	2.04	20.28	0.58
2.100	0.53	8.167	1.07	14.233	2.04	20.30	0.58
2.117	0.53	8.183	1.07	14.250	2.04	20.32	0.58
2.133	0.53	8.200	1.07	14.267	1.46	20.33	0.58
2.150	0.53	8.217	1.07	14.283	1.45	20.35	0.58
2.167	0.53	8.233	1.07	14.300	1.45	20.37	0.58
2.183	0.53	8.250	1.07	14.317	1.45	20.38	0.58
2.200	0.53	8.267	1.26	14.333	1.45	20.40	0.58
2.217	0.53	8.283	1.26	14.350	1.45	20.42	0.58
2.233	0.53	8.300	1.26	14.367	1.45	20.43	0.58
2.250	0.53	8.317	1.26	14.383	1.45	20.45	0.58
2.267	0.63	8.333	1.26	14.400	1.45	20.47	0.58
2.283	0.63	8.350	1.26	14.417	1.45	20.48	0.58
2.300	0.63	8.367	1.26	14.433	1.45	20.50	0.58
2.317	0.63	8.383	1.26	14.450	1.45	20.52	0.58
2.333	0.63	8.400	1.26	14.467	1.45	20.53	0.58
2.350	0.63	8.417	1.26	14.483	1.45	20.55	0.58
2.367	0.63	8.433	1.26	14.500	1.45	20.57	0.58
2.383	0.63	8.450	1.26	14.517	1.45	20.58	0.58
2.400	0.63	8.467	1.26	14.533	1.45	20.60	0.58
2.417	0.63	8.483	1.26	14.550	1.45	20.62	0.58
2.433	0.63	8.500	1.26	14.567	1.45	20.63	0.58
2.450	0.63	8.517	1.26	14.583	1.45	20.65	0.58
2.467	0.63	8.533	1.26	14.600	1.45	20.67	0.58
2.483	0.63	8.550	1.26	14.617	1.45	20.68	0.58
2.500	0.63	8.567	1.26	14.633	1.45	20.70	0.58
2.517	0.63	8.583	1.26	14.650	1.45	20.72	0.58
2.533	0.63	8.600	1.26	14.667	1.45	20.73	0.58
2.550	0.63	8.617	1.26	14.683	1.45	20.75	0.58
2.567	0.63	8.633	1.26	14.700	1.45	20.77	0.58
2.583	0.63	8.650	1.26	14.717	1.45	20.78	0.58
2.600	0.63	8.667	1.26	14.733	1.45	20.80	0.58
2.617	0.63	8.683	1.26	14.750	1.45	20.82	0.58
2.633	0.63	8.700	1.26	14.767	1.45	20.83	0.58
2.650	0.63	8.717	1.26	14.783	1.45	20.85	0.58
2.667	0.63	8.733	1.26	14.800	1.45	20.87	0.58
2.683	0.63	8.750	1.26	14.817	1.45	20.88	0.58

2.700	0.63	8.767	1.36	14.833	1.45	20.90	0.58
2.717	0.63	8.783	1.36	14.850	1.45	20.92	0.58
2.733	0.63	8.800	1.36	14.867	1.45	20.93	0.58
2.750	0.63	8.817	1.36	14.883	1.45	20.95	0.58
2.767	0.63	8.833	1.36	14.900	1.45	20.97	0.58
2.783	0.63	8.850	1.36	14.917	1.45	20.98	0.58
2.800	0.63	8.867	1.36	14.933	1.45	21.00	0.58
2.817	0.63	8.883	1.36	14.950	1.45	21.02	0.58
2.833	0.63	8.900	1.36	14.967	1.45	21.03	0.58
2.850	0.63	8.917	1.36	14.983	1.45	21.05	0.58
2.867	0.63	8.933	1.36	15.000	1.45	21.07	0.58
2.883	0.63	8.950	1.36	15.017	1.45	21.08	0.58
2.900	0.63	8.967	1.36	15.033	1.45	21.10	0.58
2.917	0.63	8.983	1.36	15.050	1.45	21.12	0.58
2.933	0.63	9.000	1.36	15.067	1.45	21.13	0.58
2.950	0.63	9.017	1.36	15.083	1.45	21.15	0.58
2.967	0.63	9.033	1.36	15.100	1.45	21.17	0.58
2.983	0.63	9.050	1.36	15.117	1.45	21.18	0.58
3.000	0.63	9.067	1.36	15.133	1.45	21.20	0.58
3.017	0.63	9.083	1.36	15.150	1.45	21.22	0.58
3.033	0.63	9.100	1.36	15.167	1.45	21.23	0.58
3.050	0.63	9.117	1.36	15.183	1.45	21.25	0.58
3.067	0.63	9.133	1.36	15.200	1.45	21.27	0.58
3.083	0.63	9.150	1.36	15.217	1.45	21.28	0.58
3.100	0.63	9.167	1.36	15.233	1.45	21.30	0.58
3.117	0.63	9.183	1.36	15.250	1.45	21.32	0.58
3.133	0.63	9.200	1.36	15.267	1.45	21.33	0.58
3.150	0.63	9.217	1.36	15.283	1.45	21.35	0.58
3.167	0.63	9.233	1.36	15.300	1.45	21.37	0.58
3.183	0.63	9.250	1.36	15.317	1.45	21.38	0.58
3.200	0.63	9.267	1.55	15.333	1.45	21.40	0.58
3.217	0.63	9.283	1.55	15.350	1.45	21.42	0.58
3.233	0.63	9.300	1.55	15.367	1.45	21.43	0.58
3.250	0.63	9.317	1.55	15.383	1.45	21.45	0.58
3.267	0.63	9.333	1.55	15.400	1.45	21.47	0.58
3.283	0.63	9.350	1.55	15.417	1.45	21.48	0.58
3.300	0.63	9.367	1.55	15.433	1.45	21.50	0.58
3.317	0.63	9.383	1.55	15.450	1.45	21.52	0.58
3.333	0.63	9.400	1.55	15.467	1.45	21.53	0.58
3.350	0.63	9.417	1.55	15.483	1.45	21.55	0.58
3.367	0.63	9.433	1.55	15.500	1.45	21.57	0.58
3.383	0.63	9.450	1.55	15.517	1.45	21.58	0.58
3.400	0.63	9.467	1.55	15.533	1.45	21.60	0.58
3.417	0.63	9.483	1.55	15.550	1.45	21.62	0.58
3.433	0.63	9.500	1.55	15.567	1.45	21.63	0.58
3.450	0.63	9.517	1.55	15.583	1.45	21.65	0.58
3.467	0.63	9.533	1.55	15.600	1.45	21.67	0.58
3.483	0.63	9.550	1.55	15.617	1.45	21.68	0.58
3.500	0.63	9.567	1.55	15.633	1.45	21.70	0.58
3.517	0.63	9.583	1.55	15.650	1.45	21.72	0.58
3.533	0.63	9.600	1.55	15.667	1.45	21.73	0.58
3.550	0.63	9.617	1.55	15.683	1.45	21.75	0.58
3.567	0.63	9.633	1.55	15.700	1.45	21.77	0.58
3.583	0.63	9.650	1.55	15.717	1.45	21.78	0.58
3.600	0.63	9.667	1.55	15.733	1.45	21.80	0.58
3.617	0.63	9.683	1.55	15.750	1.45	21.82	0.58
3.633	0.63	9.700	1.55	15.767	1.45	21.83	0.58
3.650	0.63	9.717	1.55	15.783	1.45	21.85	0.58
3.667	0.63	9.733	1.55	15.800	1.45	21.87	0.58
3.683	0.63	9.750	1.55	15.817	1.45	21.88	0.58
3.700	0.63	9.767	1.74	15.833	1.45	21.90	0.58
3.717	0.63	9.783	1.74	15.850	1.45	21.92	0.58
3.733	0.63	9.800	1.74	15.867	1.45	21.93	0.58
3.750	0.63	9.817	1.74	15.883	1.45	21.95	0.58
3.767	0.63	9.833	1.74	15.900	1.45	21.97	0.58
3.783	0.63	9.850	1.74	15.917	1.45	21.98	0.58
3.800	0.63	9.867	1.74	15.933	1.45	22.00	0.58
3.817	0.63	9.883	1.74	15.950	1.45	22.02	0.58
3.833	0.63	9.900	1.74	15.967	1.45	22.03	0.58
3.850	0.63	9.917	1.74	15.983	1.45	22.05	0.58
3.867	0.63	9.933	1.74	16.000	1.45	22.07	0.58
3.883	0.63	9.950	1.74	16.017	1.45	22.08	0.58
3.900	0.63	9.967	1.74	16.033	1.45	22.10	0.58
3.917	0.63	9.983	1.74	16.050	1.45	22.12	0.58
3.933	0.63	10.000	1.74	16.067	1.45	22.13	0.58
3.950	0.63	10.017	1.74	16.083	1.45	22.15	0.58
3.967	0.63	10.033	1.74	16.100	1.45	22.17	0.58
3.983	0.63	10.050	1.74	16.117	1.45	22.18	0.58
4.000	0.63	10.067	1.74	16.133	1.45	22.20	0.58
4.017	0.63	10.083	1.74	16.150	1.45	22.22	0.58
4.033	0.63	10.100	1.74	16.167	1.45	22.23	0.58
4.050	0.63	10.117	1.74	16.183	1.45	22.25	0.58
4.067	0.63	10.133	1.74	16.200	1.45	22.27	0.58
4.083	0.63	10.150	1.74	16.217	1.45	22.28	0.58
4.100	0.63	10.167	1.74	16.233	1.45	22.30	0.58
4.117	0.63	10.183	1.74	16.250	1.45	22.32	0.58
4.133	0.63	10.200	1.74	16.267	0.88	22.33	0.58
4.150	0.63	10.217	1.74	16.283	0.87	22.35	0.58
4.167	0.63	10.233	1.74	16.300	0.87	22.37	0.58
4.183	0.63	10.250	1.75	16.317	0.87	22.38	0.58
4.200	0.63	10.267	2.23	16.333	0.87	22.40	0.58
4.217	0.63	10.283	2.23	16.350	0.87	22.42	0.58
4.233	0.63	10.300	2.23	16.367	0.87	22.43	0.58
4.250	0.63	10.317	2.23	16.383	0.87	22.45	0.58
4.267	0.78	10.333	2.23	16.400	0.87	22.47	0.58
4.283	0.78	10.350	2.23	16.417	0.87	22.48	0.58
4.300	0.78	10.367	2.23	16.433	0.87	22.50	0.58
4.317	0.78	10.383	2.23	16.450	0.87	22.52	0.58
4.333	0.78	10.400	2.23	16.467	0.87	22.53	0.58
4.350	0.78	10.417	2.23	16.483	0.87	22.55	0.58

4.367	0.78	10.433	2.23	16.500	0.87	22.57	0.58
4.383	0.78	10.450	2.23	16.517	0.87	22.58	0.58
4.400	0.78	10.467	2.23	16.533	0.87	22.60	0.58
4.417	0.78	10.483	2.23	16.550	0.87	22.62	0.58
4.433	0.78	10.500	2.23	16.567	0.87	22.63	0.58
4.450	0.78	10.517	2.23	16.583	0.87	22.65	0.58
4.467	0.78	10.533	2.23	16.600	0.87	22.67	0.58
4.483	0.78	10.550	2.23	16.617	0.87	22.68	0.58
4.500	0.78	10.567	2.23	16.633	0.87	22.70	0.58
4.517	0.78	10.583	2.23	16.650	0.87	22.72	0.58
4.533	0.78	10.600	2.23	16.667	0.87	22.73	0.58
4.550	0.78	10.617	2.23	16.683	0.87	22.75	0.58
4.567	0.78	10.633	2.23	16.700	0.87	22.77	0.58
4.583	0.78	10.650	2.23	16.717	0.87	22.78	0.58
4.600	0.78	10.667	2.23	16.733	0.87	22.80	0.58
4.617	0.78	10.683	2.23	16.750	0.87	22.82	0.58
4.633	0.78	10.700	2.23	16.767	0.87	22.83	0.58
4.650	0.78	10.717	2.23	16.783	0.87	22.85	0.58
4.667	0.78	10.733	2.23	16.800	0.87	22.87	0.58
4.683	0.78	10.750	2.23	16.817	0.87	22.88	0.58
4.700	0.78	10.767	3.01	16.833	0.87	22.90	0.58
4.717	0.78	10.783	3.01	16.850	0.87	22.92	0.58
4.733	0.78	10.800	3.01	16.867	0.87	22.93	0.58
4.750	0.78	10.817	3.01	16.883	0.87	22.95	0.58
4.767	0.78	10.833	3.01	16.900	0.87	22.97	0.58
4.783	0.78	10.850	3.01	16.917	0.87	22.98	0.58
4.800	0.78	10.867	3.01	16.933	0.87	23.00	0.58
4.817	0.78	10.883	3.01	16.950	0.87	23.02	0.58
4.833	0.78	10.900	3.01	16.967	0.87	23.03	0.58
4.850	0.78	10.917	3.01	16.983	0.87	23.05	0.58
4.867	0.78	10.933	3.01	17.000	0.87	23.07	0.58
4.883	0.78	10.950	3.01	17.017	0.87	23.08	0.58
4.900	0.78	10.967	3.01	17.033	0.87	23.10	0.58
4.917	0.78	10.983	3.01	17.050	0.87	23.12	0.58
4.933	0.78	11.000	3.01	17.067	0.87	23.13	0.58
4.950	0.78	11.017	3.01	17.083	0.87	23.15	0.58
4.967	0.78	11.033	3.01	17.100	0.87	23.17	0.58
4.983	0.78	11.050	3.01	17.117	0.87	23.18	0.58
5.000	0.78	11.067	3.01	17.133	0.87	23.20	0.58
5.017	0.78	11.083	3.01	17.150	0.87	23.22	0.58
5.033	0.78	11.100	3.01	17.167	0.87	23.23	0.58
5.050	0.78	11.117	3.01	17.183	0.87	23.25	0.58
5.067	0.78	11.133	3.01	17.200	0.87	23.27	0.58
5.083	0.78	11.150	3.01	17.217	0.87	23.28	0.58
5.100	0.78	11.167	3.01	17.233	0.87	23.30	0.58
5.117	0.78	11.183	3.01	17.250	0.87	23.32	0.58
5.133	0.78	11.200	3.01	17.267	0.87	23.33	0.58
5.150	0.78	11.217	3.01	17.283	0.87	23.35	0.58
5.167	0.78	11.233	3.01	17.300	0.87	23.37	0.58
5.183	0.78	11.250	3.01	17.317	0.87	23.38	0.58
5.200	0.78	11.267	4.65	17.333	0.87	23.40	0.58
5.217	0.78	11.283	4.65	17.350	0.87	23.42	0.58
5.233	0.78	11.300	4.65	17.367	0.87	23.43	0.58
5.250	0.78	11.317	4.65	17.383	0.87	23.45	0.58
5.267	0.78	11.333	4.65	17.400	0.87	23.47	0.58
5.283	0.78	11.350	4.65	17.417	0.87	23.48	0.58
5.300	0.78	11.367	4.65	17.433	0.87	23.50	0.58
5.317	0.78	11.383	4.65	17.450	0.87	23.52	0.58
5.333	0.78	11.400	4.65	17.467	0.87	23.53	0.58
5.350	0.78	11.417	4.65	17.483	0.87	23.55	0.58
5.367	0.78	11.433	4.65	17.500	0.87	23.57	0.58
5.383	0.78	11.450	4.65	17.517	0.87	23.58	0.58
5.400	0.78	11.467	4.65	17.533	0.87	23.60	0.58
5.417	0.78	11.483	4.65	17.550	0.87	23.62	0.58
5.433	0.78	11.500	4.65	17.567	0.87	23.63	0.58
5.450	0.78	11.517	4.65	17.583	0.87	23.65	0.58
5.467	0.78	11.533	4.65	17.600	0.87	23.67	0.58
5.483	0.78	11.550	4.65	17.617	0.87	23.68	0.58
5.500	0.78	11.567	4.65	17.633	0.87	23.70	0.58
5.517	0.78	11.583	4.65	17.650	0.87	23.72	0.58
5.533	0.78	11.600	4.65	17.667	0.87	23.73	0.58
5.550	0.78	11.617	4.65	17.683	0.87	23.75	0.58
5.567	0.78	11.633	4.65	17.700	0.87	23.77	0.58
5.583	0.78	11.650	4.65	17.717	0.87	23.78	0.58
5.600	0.78	11.667	4.65	17.733	0.87	23.80	0.58
5.617	0.78	11.683	4.65	17.750	0.87	23.82	0.58
5.633	0.78	11.700	4.65	17.767	0.87	23.83	0.58
5.650	0.78	11.717	4.65	17.783	0.87	23.85	0.58
5.667	0.78	11.733	4.65	17.800	0.87	23.87	0.58
5.683	0.78	11.750	4.65	17.817	0.87	23.88	0.58
5.700	0.78	11.767	14.34	17.833	0.87	23.90	0.58
5.717	0.78	11.783	14.35	17.850	0.87	23.92	0.58
5.733	0.78	11.800	14.35	17.867	0.87	23.93	0.58
5.750	0.78	11.817	14.35	17.883	0.87	23.95	0.58
5.767	0.78	11.833	14.35	17.900	0.87	23.97	0.58
5.783	0.78	11.850	14.35	17.917	0.87	23.98	0.58
5.800	0.78	11.867	14.35	17.933	0.87	24.00	0.58
5.817	0.78	11.883	14.35	17.950	0.87	24.02	0.58
5.833	0.78	11.900	14.35	17.967	0.87	24.03	0.58
5.850	0.78	11.917	14.35	17.983	0.87	24.05	0.58
5.867	0.78	11.933	14.35	18.000	0.87	24.07	0.58
5.883	0.78	11.950	14.35	18.017	0.87	24.08	0.58
5.900	0.78	11.967	14.35	18.033	0.87	24.10	0.58
5.917	0.78	11.983	14.35	18.050	0.87	24.12	0.58
5.933	0.78	12.000	14.35	18.067	0.87	24.13	0.58
5.950	0.78	12.017	59.30	18.083	0.87	24.15	0.58
5.967	0.78	12.033	59.33	18.100	0.87	24.17	0.58
5.983	0.78	12.050	59.33	18.117	0.87	24.18	0.58
6.000	0.78	12.067	59.33	18.133	0.87	24.20	0.58
6.017	0.78	12.083	59.33	18.150	0.87	24.22	0.58

6.033	0.78	12.100	59.33	18.167	0.87	24.23	0.58				
6.050	0.78	12.117	59.33	18.183	0.87	24.25	0.58				
6.067	0.78	12.133	59.33	18.200	0.87						

Max.Eff.Inten.(mm/hr)=	59.33	8.21	
over (min)	5.00	3.00	
Storage Coeff. (min)=	1.10 (ii)	2.59 (ii)	
Unit Hyd. Tpeak (min)=	5.00	3.00	
Unit Hyd. peak (cms)=	0.46	0.41	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.014 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	46.47	5.73	44.42
TOTAL RAINFALL (mm)=	48.47	48.47	48.47
RUNOFF COEFFICIENT =	0.96	0.12	0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. 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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** SIMULATION:08- 5yr-24hr-SCS **
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CALIB			
STANDHYD (0001)	Area (ha)=	0.09	
ID= 1 DT= 1.0 min	Total Imp(%)=	95.00	Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.06	12.150	80.80	18.22	1.19
0.033	0.00	6.100	1.06	12.167	80.80	18.23	1.19
0.050	0.00	6.117	1.06	12.183	80.80	18.25	1.19
0.067	0.00	6.133	1.06	12.200	80.80	18.27	1.19
0.083	0.00	6.150	1.06	12.217	80.80	18.28	1.19
0.100	0.00	6.167	1.06	12.233	80.80	18.30	1.19
0.117	0.00	6.183	1.06	12.250	80.80	18.32	1.19
0.133	0.00	6.200	1.06	12.267	9.57	18.33	1.19
0.150	0.00	6.217	1.06	12.283	9.51	18.35	1.19
0.167	0.00	6.233	1.06	12.300	9.51	18.37	1.19
0.183	0.00	6.250	1.06	12.317	9.51	18.38	1.19
0.200	0.00	6.267	1.19	12.333	9.51	18.40	1.19
0.217	0.00	6.283	1.19	12.350	9.51	18.42	1.19
0.233	0.00	6.300	1.19	12.367	9.51	18.43	1.19
0.250	0.00	6.317	1.19	12.383	9.51	18.45	1.19
0.267	0.73	6.333	1.19	12.400	9.51	18.47	1.19
0.283	0.73	6.350	1.19	12.417	9.51	18.48	1.19
0.300	0.73	6.367	1.19	12.433	9.51	18.50	1.19
0.317	0.73	6.383	1.19	12.450	9.51	18.52	1.19
0.333	0.73	6.400	1.19	12.467	9.51	18.53	1.19
0.350	0.73	6.417	1.19	12.483	9.51	18.55	1.19
0.367	0.73	6.433	1.19	12.500	9.51	18.57	1.19
0.383	0.73	6.450	1.19	12.517	9.51	18.58	1.19
0.400	0.73	6.467	1.19	12.533	9.51	18.60	1.19
0.417	0.73	6.483	1.19	12.550	9.51	18.62	1.19
0.433	0.73	6.500	1.19	12.567	9.51	18.63	1.19
0.450	0.73	6.517	1.19	12.583	9.51	18.65	1.19
0.467	0.73	6.533	1.19	12.600	9.51	18.67	1.19
0.483	0.73	6.550	1.19	12.617	9.51	18.68	1.19
0.500	0.73	6.567	1.19	12.633	9.51	18.70	1.19
0.517	0.73	6.583	1.19	12.650	9.51	18.72	1.19
0.533	0.73	6.600	1.19	12.667	9.51	18.73	1.19
0.550	0.73	6.617	1.19	12.683	9.51	18.75	1.19
0.567	0.73	6.633	1.19	12.700	9.51	18.77	1.19
0.583	0.73	6.650	1.19	12.717	9.51	18.78	1.19
0.600	0.73	6.667	1.19	12.733	9.51	18.80	1.19
0.617	0.73	6.683	1.19	12.750	9.51	18.82	1.19
0.633	0.73	6.700	1.19	12.767	4.89	18.83	1.19
0.650	0.73	6.717	1.19	12.783	4.88	18.85	1.19
0.667	0.73	6.733	1.19	12.800	4.88	18.87	1.19
0.683	0.73	6.750	1.19	12.817	4.88	18.88	1.19
0.700	0.73	6.767	1.19	12.833	4.88	18.90	1.19
0.717	0.73	6.783	1.19	12.850	4.88	18.92	1.19
0.733	0.73	6.800	1.19	12.867	4.88	18.93	1.19
0.750	0.73	6.817	1.19	12.883	4.88	18.95	1.19
0.767	0.73	6.833	1.19	12.900	4.88	18.97	1.19
0.783	0.73	6.850	1.19	12.917	4.88	18.98	1.19
0.800	0.73	6.867	1.19	12.933	4.88	19.00	1.19
0.817	0.73	6.883	1.19	12.950	4.88	19.02	1.19
0.833	0.73	6.900	1.19	12.967	4.88	19.03	1.19
0.850	0.73	6.917	1.19	12.983	4.88	19.05	1.19
0.867	0.73	6.933	1.19	13.000	4.88	19.07	1.19
0.883	0.73	6.950	1.19	13.017	4.88	19.08	1.19
0.900	0.73	6.967	1.19	13.033	4.88	19.10	1.19
0.917	0.73	6.983	1.19	13.050	4.88	19.12	1.19

0.933	0.73	7.000	1.19	13.067	4.88	19.13	1.19
0.950	0.73	7.017	1.19	13.083	4.88	19.15	1.19
0.967	0.73	7.033	1.19	13.100	4.88	19.17	1.19
0.983	0.73	7.050	1.19	13.117	4.88	19.18	1.19
1.000	0.73	7.067	1.19	13.133	4.88	19.20	1.19
1.017	0.73	7.083	1.19	13.150	4.88	19.22	1.19
1.033	0.73	7.100	1.19	13.167	4.88	19.23	1.19
1.050	0.73	7.117	1.19	13.183	4.88	19.25	1.19
1.067	0.73	7.133	1.19	13.200	4.88	19.27	1.19
1.083	0.73	7.150	1.19	13.217	4.88	19.28	1.19
1.100	0.73	7.167	1.19	13.233	4.88	19.30	1.19
1.117	0.73	7.183	1.19	13.250	4.88	19.32	1.19
1.133	0.73	7.200	1.19	13.267	3.57	19.33	1.19
1.150	0.73	7.217	1.19	13.283	3.56	19.35	1.19
1.167	0.73	7.233	1.19	13.300	3.56	19.37	1.19
1.183	0.73	7.250	1.19	13.317	3.56	19.38	1.19
1.200	0.73	7.267	1.45	13.333	3.56	19.40	1.19
1.217	0.73	7.283	1.45	13.350	3.56	19.42	1.19
1.233	0.73	7.300	1.45	13.367	3.56	19.43	1.19
1.250	0.73	7.317	1.45	13.383	3.56	19.45	1.19
1.267	0.73	7.333	1.45	13.400	3.56	19.47	1.19
1.283	0.73	7.350	1.45	13.417	3.56	19.48	1.19
1.300	0.73	7.367	1.45	13.433	3.56	19.50	1.19
1.317	0.73	7.383	1.45	13.450	3.56	19.52	1.19
1.333	0.73	7.400	1.45	13.467	3.56	19.53	1.19
1.350	0.73	7.417	1.45	13.483	3.56	19.55	1.19
1.367	0.73	7.433	1.45	13.500	3.56	19.57	1.19
1.383	0.73	7.450	1.45	13.517	3.56	19.58	1.19
1.400	0.73	7.467	1.45	13.533	3.56	19.60	1.19
1.417	0.73	7.483	1.45	13.550	3.56	19.62	1.19
1.433	0.73	7.500	1.45	13.567	3.56	19.63	1.19
1.450	0.73	7.517	1.45	13.583	3.56	19.65	1.19
1.467	0.73	7.533	1.45	13.600	3.56	19.67	1.19
1.483	0.73	7.550	1.45	13.617	3.56	19.68	1.19
1.500	0.73	7.567	1.45	13.633	3.56	19.70	1.19
1.517	0.73	7.583	1.45	13.650	3.56	19.72	1.19
1.533	0.73	7.600	1.45	13.667	3.56	19.73	1.19
1.550	0.73	7.617	1.45	13.683	3.56	19.75	1.19
1.567	0.73	7.633	1.45	13.700	3.56	19.77	1.19
1.583	0.73	7.650	1.45	13.717	3.56	19.78	1.19
1.600	0.73	7.667	1.45	13.733	3.56	19.80	1.19
1.617	0.73	7.683	1.45	13.750	3.56	19.82	1.19
1.633	0.73	7.700	1.45	13.767	2.77	19.83	1.19
1.650	0.73	7.717	1.45	13.783	2.77	19.85	1.19
1.667	0.73	7.733	1.45	13.800	2.77	19.87	1.19
1.683	0.73	7.750	1.45	13.817	2.77	19.88	1.19
1.700	0.73	7.767	1.45	13.833	2.77	19.90	1.19
1.717	0.73	7.783	1.45	13.850	2.77	19.92	1.19
1.733	0.73	7.800	1.45	13.867	2.77	19.93	1.19
1.750	0.73	7.817	1.45	13.883	2.77	19.95	1.19
1.767	0.73	7.833	1.45	13.900	2.77	19.97	1.19
1.783	0.73	7.850	1.45	13.917	2.77	19.98	1.19
1.800	0.73	7.867	1.45	13.933	2.77	20.00	1.19
1.817	0.73	7.883	1.45	13.950	2.77	20.02	1.19
1.833	0.73	7.900	1.45	13.967	2.77	20.03	1.19
1.850	0.73	7.917	1.45	13.983	2.77	20.05	1.19
1.867	0.73	7.933	1.45	14.000	2.77	20.07	1.19
1.883	0.73	7.950	1.45	14.017	2.77	20.08	1.19
1.900	0.73	7.967	1.45	14.033	2.77	20.10	1.19
1.917	0.73	7.983	1.45	14.050	2.77	20.12	1.19
1.933	0.73	8.000	1.45	14.067	2.77	20.13	1.19
1.950	0.73	8.017	1.45	14.083	2.77	20.15	1.19
1.967	0.73	8.033	1.45	14.100	2.77	20.17	1.19
1.983	0.73	8.050	1.45	14.117	2.77	20.18	1.19
2.000	0.73	8.067	1.45	14.133	2.77	20.20	1.19
2.017	0.73	8.083	1.45	14.150	2.77	20.22	1.19
2.033	0.73	8.100	1.45	14.167	2.77	20.23	1.19
2.050	0.73	8.117	1.45	14.183	2.77	20.25	1.19
2.067	0.73	8.133	1.45	14.200	2.77	20.27	0.80
2.083	0.73	8.150	1.45	14.217	2.77	20.28	0.79
2.100	0.73	8.167	1.45	14.233	2.77	20.30	0.79
2.117	0.73	8.183	1.45	14.250	2.77	20.32	0.79
2.133	0.73	8.200	1.45	14.267	1.98	20.33	0.79
2.150	0.73	8.217	1.45	14.283	1.98	20.35	0.79
2.167	0.73	8.233	1.45	14.300	1.98	20.37	0.79
2.183	0.73	8.250	1.45	14.317	1.98	20.38	0.79
2.200	0.73	8.267	1.72	14.333	1.98	20.40	0.79
2.217	0.73	8.283	1.72	14.350	1.98	20.42	0.79
2.233	0.73	8.300	1.72	14.367	1.98	20.43	0.79
2.250	0.73	8.317	1.72	14.383	1.98	20.45	0.79
2.267	0.86	8.333	1.72	14.400	1.98	20.47	0.79
2.283	0.86	8.350	1.72	14.417	1.98	20.48	0.79
2.300	0.86	8.367	1.72	14.433	1.98	20.50	0.79
2.317	0.86	8.383	1.72	14.450	1.98	20.52	0.79
2.333	0.86	8.400	1.72	14.467	1.98	20.53	0.79
2.350	0.86	8.417	1.72	14.483	1.98	20.55	0.79
2.367	0.86	8.433	1.72	14.500	1.98	20.57	0.79
2.383	0.86	8.450	1.72	14.517	1.98	20.58	0.79
2.400	0.86	8.467	1.72	14.533	1.98	20.60	0.79
2.417	0.86	8.483	1.72	14.550	1.98	20.62	0.79
2.433	0.86	8.500	1.72	14.567	1.98	20.63	0.79
2.450	0.86	8.517	1.72	14.583	1.98	20.65	0.79
2.467	0.86	8.533	1.72	14.600	1.98	20.67	0.79
2.483	0.86	8.550	1.72	14.617	1.98	20.68	0.79
2.500	0.86	8.567	1.72	14.633	1.98	20.70	0.79
2.517	0.86	8.583	1.72	14.650	1.98	20.72	0.79
2.533	0.86	8.600	1.72	14.667	1.98	20.73	0.79
2.550	0.86	8.617	1.72	14.683	1.98	20.75	0.79
2.567	0.86	8.633	1.72	14.700	1.98	20.77	0.79
2.583	0.86	8.650	1.72	14.717	1.98	20.78	0.79

2.600	0.86	8.667	1.72	14.733	1.98	20.80	0.79
2.617	0.86	8.683	1.72	14.750	1.98	20.82	0.79
2.633	0.86	8.700	1.72	14.767	1.98	20.83	0.79
2.650	0.86	8.717	1.72	14.783	1.98	20.85	0.79
2.667	0.86	8.733	1.72	14.800	1.98	20.87	0.79
2.683	0.86	8.750	1.72	14.817	1.98	20.88	0.79
2.700	0.86	8.767	1.85	14.833	1.98	20.90	0.79
2.717	0.86	8.783	1.85	14.850	1.98	20.92	0.79
2.733	0.86	8.800	1.85	14.867	1.98	20.93	0.79
2.750	0.86	8.817	1.85	14.883	1.98	20.95	0.79
2.767	0.86	8.833	1.85	14.900	1.98	20.97	0.79
2.783	0.86	8.850	1.85	14.917	1.98	20.98	0.79
2.800	0.86	8.867	1.85	14.933	1.98	21.00	0.79
2.817	0.86	8.883	1.85	14.950	1.98	21.02	0.79
2.833	0.86	8.900	1.85	14.967	1.98	21.03	0.79
2.850	0.86	8.917	1.85	14.983	1.98	21.05	0.79
2.867	0.86	8.933	1.85	15.000	1.98	21.07	0.79
2.883	0.86	8.950	1.85	15.017	1.98	21.08	0.79
2.900	0.86	8.967	1.85	15.033	1.98	21.10	0.79
2.917	0.86	8.983	1.85	15.050	1.98	21.12	0.79
2.933	0.86	9.000	1.85	15.067	1.98	21.13	0.79
2.950	0.86	9.017	1.85	15.083	1.98	21.15	0.79
2.967	0.86	9.033	1.85	15.100	1.98	21.17	0.79
2.983	0.86	9.050	1.85	15.117	1.98	21.18	0.79
3.000	0.86	9.067	1.85	15.133	1.98	21.20	0.79
3.017	0.86	9.083	1.85	15.150	1.98	21.22	0.79
3.033	0.86	9.100	1.85	15.167	1.98	21.23	0.79
3.050	0.86	9.117	1.85	15.183	1.98	21.25	0.79
3.067	0.86	9.133	1.85	15.200	1.98	21.27	0.79
3.083	0.86	9.150	1.85	15.217	1.98	21.28	0.79
3.100	0.86	9.167	1.85	15.233	1.98	21.30	0.79
3.117	0.86	9.183	1.85	15.250	1.98	21.32	0.79
3.133	0.86	9.200	1.85	15.267	1.98	21.33	0.79
3.150	0.86	9.217	1.85	15.283	1.98	21.35	0.79
3.167	0.86	9.233	1.85	15.300	1.98	21.37	0.79
3.183	0.86	9.250	1.85	15.317	1.98	21.38	0.79
3.200	0.86	9.267	2.11	15.333	1.98	21.40	0.79
3.217	0.86	9.283	2.11	15.350	1.98	21.42	0.79
3.233	0.86	9.300	2.11	15.367	1.98	21.43	0.79
3.250	0.86	9.317	2.11	15.383	1.98	21.45	0.79
3.267	0.86	9.333	2.11	15.400	1.98	21.47	0.79
3.283	0.86	9.350	2.11	15.417	1.98	21.48	0.79
3.300	0.86	9.367	2.11	15.433	1.98	21.50	0.79
3.317	0.86	9.383	2.11	15.450	1.98	21.52	0.79
3.333	0.86	9.400	2.11	15.467	1.98	21.53	0.79
3.350	0.86	9.417	2.11	15.483	1.98	21.55	0.79
3.367	0.86	9.433	2.11	15.500	1.98	21.57	0.79
3.383	0.86	9.450	2.11	15.517	1.98	21.58	0.79
3.400	0.86	9.467	2.11	15.533	1.98	21.60	0.79
3.417	0.86	9.483	2.11	15.550	1.98	21.62	0.79
3.433	0.86	9.500	2.11	15.567	1.98	21.63	0.79
3.450	0.86	9.517	2.11	15.583	1.98	21.65	0.79
3.467	0.86	9.533	2.11	15.600	1.98	21.67	0.79
3.483	0.86	9.550	2.11	15.617	1.98	21.68	0.79
3.500	0.86	9.567	2.11	15.633	1.98	21.70	0.79
3.517	0.86	9.583	2.11	15.650	1.98	21.72	0.79
3.533	0.86	9.600	2.11	15.667	1.98	21.73	0.79
3.550	0.86	9.617	2.11	15.683	1.98	21.75	0.79
3.567	0.86	9.633	2.11	15.700	1.98	21.77	0.79
3.583	0.86	9.650	2.11	15.717	1.98	21.78	0.79
3.600	0.86	9.667	2.11	15.733	1.98	21.80	0.79
3.617	0.86	9.683	2.11	15.750	1.98	21.82	0.79
3.633	0.86	9.700	2.11	15.767	1.98	21.83	0.79
3.650	0.86	9.717	2.11	15.783	1.98	21.85	0.79
3.667	0.86	9.733	2.11	15.800	1.98	21.87	0.79
3.683	0.86	9.750	2.11	15.817	1.98	21.88	0.79
3.700	0.86	9.767	2.38	15.833	1.98	21.90	0.79
3.717	0.86	9.783	2.38	15.850	1.98	21.92	0.79
3.733	0.86	9.800	2.38	15.867	1.98	21.93	0.79
3.750	0.86	9.817	2.38	15.883	1.98	21.95	0.79
3.767	0.86	9.833	2.38	15.900	1.98	21.97	0.79
3.783	0.86	9.850	2.38	15.917	1.98	21.98	0.79
3.800	0.86	9.867	2.38	15.933	1.98	22.00	0.79
3.817	0.86	9.883	2.38	15.950	1.98	22.02	0.79
3.833	0.86	9.900	2.38	15.967	1.98	22.03	0.79
3.850	0.86	9.917	2.38	15.983	1.98	22.05	0.79
3.867	0.86	9.933	2.38	16.000	1.98	22.07	0.79
3.883	0.86	9.950	2.38	16.017	1.98	22.08	0.79
3.900	0.86	9.967	2.38	16.033	1.98	22.10	0.79
3.917	0.86	9.983	2.38	16.050	1.98	22.12	0.79
3.933	0.86	10.000	2.38	16.067	1.98	22.13	0.79
3.950	0.86	10.017	2.38	16.083	1.98	22.15	0.79
3.967	0.86	10.033	2.38	16.100	1.98	22.17	0.79
3.983	0.86	10.050	2.38	16.117	1.98	22.18	0.79
4.000	0.86	10.067	2.38	16.133	1.98	22.20	0.79
4.017	0.86	10.083	2.38	16.150	1.98	22.22	0.79
4.033	0.86	10.100	2.38	16.167	1.98	22.23	0.79
4.050	0.86	10.117	2.38	16.183	1.98	22.25	0.79
4.067	0.86	10.133	2.38	16.200	1.98	22.27	0.79
4.083	0.86	10.150	2.38	16.217	1.98	22.28	0.79
4.100	0.86	10.167	2.38	16.233	1.98	22.30	0.79
4.117	0.86	10.183	2.38	16.250	1.98	22.32	0.79
4.133	0.86	10.200	2.38	16.267	1.19	22.33	0.79
4.150	0.86	10.217	2.38	16.283	1.19	22.35	0.79
4.167	0.86	10.233	2.38	16.300	1.19	22.37	0.79
4.183	0.86	10.250	2.38	16.317	1.19	22.38	0.79
4.200	0.86	10.267	3.04	16.333	1.19	22.40	0.79
4.217	0.86	10.283	3.04	16.350	1.19	22.42	0.79
4.233	0.86	10.300	3.04	16.367	1.19	22.43	0.79
4.250	0.86	10.317	3.04	16.383	1.19	22.45	0.79

4.267	1.06	10.333	3.04	16.400	1.19	22.47	0.79
4.283	1.06	10.350	3.04	16.417	1.19	22.48	0.79
4.300	1.06	10.367	3.04	16.433	1.19	22.50	0.79
4.317	1.06	10.383	3.04	16.450	1.19	22.52	0.79
4.333	1.06	10.400	3.04	16.467	1.19	22.53	0.79
4.350	1.06	10.417	3.04	16.483	1.19	22.55	0.79
4.367	1.06	10.433	3.04	16.500	1.19	22.57	0.79
4.383	1.06	10.450	3.04	16.517	1.19	22.58	0.79
4.400	1.06	10.467	3.04	16.533	1.19	22.60	0.79
4.417	1.06	10.483	3.04	16.550	1.19	22.62	0.79
4.433	1.06	10.500	3.04	16.567	1.19	22.63	0.79
4.450	1.06	10.517	3.04	16.583	1.19	22.65	0.79
4.467	1.06	10.533	3.04	16.600	1.19	22.67	0.79
4.483	1.06	10.550	3.04	16.617	1.19	22.68	0.79
4.500	1.06	10.567	3.04	16.633	1.19	22.70	0.79
4.517	1.06	10.583	3.04	16.650	1.19	22.72	0.79
4.533	1.06	10.600	3.04	16.667	1.19	22.73	0.79
4.550	1.06	10.617	3.04	16.683	1.19	22.75	0.79
4.567	1.06	10.633	3.04	16.700	1.19	22.77	0.79
4.583	1.06	10.650	3.04	16.717	1.19	22.78	0.79
4.600	1.06	10.667	3.04	16.733	1.19	22.80	0.79
4.617	1.06	10.683	3.04	16.750	1.19	22.82	0.79
4.633	1.06	10.700	3.04	16.767	1.19	22.83	0.79
4.650	1.06	10.717	3.04	16.783	1.19	22.85	0.79
4.667	1.06	10.733	3.04	16.800	1.19	22.87	0.79
4.683	1.06	10.750	3.04	16.817	1.19	22.88	0.79
4.700	1.06	10.767	4.09	16.833	1.19	22.90	0.79
4.717	1.06	10.783	4.09	16.850	1.19	22.92	0.79
4.733	1.06	10.800	4.09	16.867	1.19	22.93	0.79
4.750	1.06	10.817	4.09	16.883	1.19	22.95	0.79
4.767	1.06	10.833	4.09	16.900	1.19	22.97	0.79
4.783	1.06	10.850	4.09	16.917	1.19	22.98	0.79
4.800	1.06	10.867	4.09	16.933	1.19	23.00	0.79
4.817	1.06	10.883	4.09	16.950	1.19	23.02	0.79
4.833	1.06	10.900	4.09	16.967	1.19	23.03	0.79
4.850	1.06	10.917	4.09	16.983	1.19	23.05	0.79
4.867	1.06	10.933	4.09	17.000	1.19	23.07	0.79
4.883	1.06	10.950	4.09	17.017	1.19	23.08	0.79
4.900	1.06	10.967	4.09	17.033	1.19	23.10	0.79
4.917	1.06	10.983	4.09	17.050	1.19	23.12	0.79
4.933	1.06	11.000	4.09	17.067	1.19	23.13	0.79
4.950	1.06	11.017	4.09	17.083	1.19	23.15	0.79
4.967	1.06	11.033	4.09	17.100	1.19	23.17	0.79
4.983	1.06	11.050	4.09	17.117	1.19	23.18	0.79
5.000	1.06	11.067	4.09	17.133	1.19	23.20	0.79
5.017	1.06	11.083	4.09	17.150	1.19	23.22	0.79
5.033	1.06	11.100	4.09	17.167	1.19	23.23	0.79
5.050	1.06	11.117	4.09	17.183	1.19	23.25	0.79
5.067	1.06	11.133	4.09	17.200	1.19	23.27	0.79
5.083	1.06	11.150	4.09	17.217	1.19	23.28	0.79
5.100	1.06	11.167	4.09	17.233	1.19	23.30	0.79
5.117	1.06	11.183	4.09	17.250	1.19	23.32	0.79
5.133	1.06	11.200	4.09	17.267	1.19	23.33	0.79
5.150	1.06	11.217	4.09	17.283	1.19	23.35	0.79
5.167	1.06	11.233	4.09	17.300	1.19	23.37	0.79
5.183	1.06	11.250	4.09	17.317	1.19	23.38	0.79
5.200	1.06	11.267	6.34	17.333	1.19	23.40	0.79
5.217	1.06	11.283	6.34	17.350	1.19	23.42	0.79
5.233	1.06	11.300	6.34	17.367	1.19	23.43	0.79
5.250	1.06	11.317	6.34	17.383	1.19	23.45	0.79
5.267	1.06	11.333	6.34	17.400	1.19	23.47	0.79
5.283	1.06	11.350	6.34	17.417	1.19	23.48	0.79
5.300	1.06	11.367	6.34	17.433	1.19	23.50	0.79
5.317	1.06	11.383	6.34	17.450	1.19	23.52	0.79
5.333	1.06	11.400	6.34	17.467	1.19	23.53	0.79
5.350	1.06	11.417	6.34	17.483	1.19	23.55	0.79
5.367	1.06	11.433	6.34	17.500	1.19	23.57	0.79
5.383	1.06	11.450	6.34	17.517	1.19	23.58	0.79
5.400	1.06	11.467	6.34	17.533	1.19	23.60	0.79
5.417	1.06	11.483	6.34	17.550	1.19	23.62	0.79
5.433	1.06	11.500	6.34	17.567	1.19	23.63	0.79
5.450	1.06	11.517	6.34	17.583	1.19	23.65	0.79
5.467	1.06	11.533	6.34	17.600	1.19	23.67	0.79
5.483	1.06	11.550	6.34	17.617	1.19	23.68	0.79
5.500	1.06	11.567	6.34	17.633	1.19	23.70	0.79
5.517	1.06	11.583	6.34	17.650	1.19	23.72	0.79
5.533	1.06	11.600	6.34	17.667	1.19	23.73	0.79
5.550	1.06	11.617	6.34	17.683	1.19	23.75	0.79
5.567	1.06	11.633	6.34	17.700	1.19	23.77	0.79
5.583	1.06	11.650	6.34	17.717	1.19	23.78	0.79
5.600	1.06	11.667	6.34	17.733	1.19	23.80	0.79
5.617	1.06	11.683	6.34	17.750	1.19	23.82	0.79
5.633	1.06	11.700	6.34	17.767	1.19	23.83	0.79
5.650	1.06	11.717	6.34	17.783	1.19	23.85	0.79
5.667	1.06	11.733	6.34	17.800	1.19	23.87	0.79
5.683	1.06	11.750	6.34	17.817	1.19	23.88	0.79
5.700	1.06	11.767	19.53	17.833	1.19	23.90	0.79
5.717	1.06	11.783	19.54	17.850	1.19	23.92	0.79
5.733	1.06	11.800	19.54	17.867	1.19	23.93	0.79
5.750	1.06	11.817	19.54	17.883	1.19	23.95	0.79
5.767	1.06	11.833	19.54	17.900	1.19	23.97	0.79
5.783	1.06	11.850	19.54	17.917	1.19	23.98	0.79
5.800	1.06	11.867	19.54	17.933	1.19	24.00	0.79
5.817	1.06	11.883	19.54	17.950	1.19	24.02	0.79
5.833	1.06	11.900	19.54	17.967	1.19	24.03	0.79
5.850	1.06	11.917	19.54	17.983	1.19	24.05	0.79
5.867	1.06	11.933	19.54	18.000	1.19	24.07	0.79
5.883	1.06	11.950	19.54	18.017	1.19	24.08	0.79
5.900	1.06	11.967	19.54	18.033	1.19	24.10	0.79
5.917	1.06	11.983	19.54	18.050	1.19	24.12	0.79

5.933	1.06	12.000	19.54	18.067	1.19	24.13	0.79
5.950	1.06	12.017	80.75	18.083	1.19	24.15	0.79
5.967	1.06	12.033	80.80	18.100	1.19	24.17	0.79
5.983	1.06	12.050	80.80	18.117	1.19	24.18	0.79
6.000	1.06	12.067	80.80	18.133	1.19	24.20	0.79
6.017	1.06	12.083	80.80	18.150	1.19	24.22	0.79
6.033	1.06	12.100	80.80	18.167	1.19	24.23	0.79
6.050	1.06	12.117	80.80	18.183	1.19	24.25	0.79
6.067	1.06	12.133	80.80	18.200	1.19		

Max.Eff.Inten.(mm/hr)=	80.80	15.41	
over (min)	5.00	3.00	
Storage Coeff. (min)=	0.97 (ii)	2.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	3.00	
Unit Hyd. peak (cms)=	0.48	0.44	
			TOTALS
PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	64.01	10.71	61.34
TOTAL RAINFALL (mm)=	66.01	66.01	66.01
RUNOFF COEFFICIENT =	0.97	0.16	0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:09- 10yr-24hr-SCS **
****

CALIB		
STANDHYD (0001)	Area (ha)=	0.09
ID= 1 DT= 1.0 min	Total Imp(%)=	95.00 Dir. Conn.(%)= 95.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.00
Dep. Storage (mm)=	2.00	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	24.49	15.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.16	12.150	88.39	18.22	1.30
0.033	0.00	6.100	1.16	12.167	88.39	18.23	1.30
0.050	0.00	6.117	1.16	12.183	88.39	18.25	1.30
0.067	0.00	6.133	1.16	12.200	88.39	18.27	1.30
0.083	0.00	6.150	1.16	12.217	88.39	18.28	1.30
0.100	0.00	6.167	1.16	12.233	88.39	18.30	1.30
0.117	0.00	6.183	1.16	12.250	88.39	18.32	1.30
0.133	0.00	6.200	1.16	12.267	10.47	18.33	1.30
0.150	0.00	6.217	1.16	12.283	10.40	18.35	1.30
0.167	0.00	6.233	1.16	12.300	10.40	18.37	1.30
0.183	0.00	6.250	1.16	12.317	10.40	18.38	1.30
0.200	0.00	6.267	1.30	12.333	10.40	18.40	1.30
0.217	0.00	6.283	1.30	12.350	10.40	18.42	1.30
0.233	0.00	6.300	1.30	12.367	10.40	18.43	1.30
0.250	0.00	6.317	1.30	12.383	10.40	18.45	1.30
0.267	0.79	6.333	1.30	12.400	10.40	18.47	1.30
0.283	0.79	6.350	1.30	12.417	10.40	18.48	1.30
0.300	0.79	6.367	1.30	12.433	10.40	18.50	1.30
0.317	0.79	6.383	1.30	12.450	10.40	18.52	1.30
0.333	0.79	6.400	1.30	12.467	10.40	18.53	1.30
0.350	0.79	6.417	1.30	12.483	10.40	18.55	1.30
0.367	0.79	6.433	1.30	12.500	10.40	18.57	1.30
0.383	0.79	6.450	1.30	12.517	10.40	18.58	1.30
0.400	0.79	6.467	1.30	12.533	10.40	18.60	1.30
0.417	0.79	6.483	1.30	12.550	10.40	18.62	1.30
0.433	0.79	6.500	1.30	12.567	10.40	18.63	1.30
0.450	0.79	6.517	1.30	12.583	10.40	18.65	1.30
0.467	0.79	6.533	1.30	12.600	10.40	18.67	1.30
0.483	0.79	6.550	1.30	12.617	10.40	18.68	1.30
0.500	0.79	6.567	1.30	12.633	10.40	18.70	1.30
0.517	0.79	6.583	1.30	12.650	10.40	18.72	1.30
0.533	0.79	6.600	1.30	12.667	10.40	18.73	1.30
0.550	0.79	6.617	1.30	12.683	10.40	18.75	1.30
0.567	0.79	6.633	1.30	12.700	10.40	18.77	1.30
0.583	0.79	6.650	1.30	12.717	10.40	18.78	1.30
0.600	0.79	6.667	1.30	12.733	10.40	18.80	1.30
0.617	0.79	6.683	1.30	12.750	10.40	18.82	1.30
0.633	0.79	6.700	1.30	12.767	5.35	18.83	1.30
0.650	0.79	6.717	1.30	12.783	5.34	18.85	1.30
0.667	0.79	6.733	1.30	12.800	5.34	18.87	1.30
0.683	0.79	6.750	1.30	12.817	5.34	18.88	1.30
0.700	0.79	6.767	1.30	12.833	5.34	18.90	1.30
0.717	0.79	6.783	1.30	12.850	5.34	18.92	1.30
0.733	0.79	6.800	1.30	12.867	5.34	18.93	1.30
0.750	0.79	6.817	1.30	12.883	5.34	18.95	1.30
0.767	0.79	6.833	1.30	12.900	5.34	18.97	1.30
0.783	0.79	6.850	1.30	12.917	5.34	18.98	1.30
0.800	0.79	6.867	1.30	12.933	5.34	19.00	1.30

0.817	0.79	6.883	1.30	12.950	5.34	19.02	1.30
0.833	0.79	6.900	1.30	12.967	5.34	19.03	1.30
0.850	0.79	6.917	1.30	12.983	5.34	19.05	1.30
0.867	0.79	6.933	1.30	13.000	5.34	19.07	1.30
0.883	0.79	6.950	1.30	13.017	5.34	19.08	1.30
0.900	0.79	6.967	1.30	13.033	5.34	19.10	1.30
0.917	0.79	6.983	1.30	13.050	5.34	19.12	1.30
0.933	0.79	7.000	1.30	13.067	5.34	19.13	1.30
0.950	0.79	7.017	1.30	13.083	5.34	19.15	1.30
0.967	0.79	7.033	1.30	13.100	5.34	19.17	1.30
0.983	0.79	7.050	1.30	13.117	5.34	19.18	1.30
1.000	0.79	7.067	1.30	13.133	5.34	19.20	1.30
1.017	0.79	7.083	1.30	13.150	5.34	19.22	1.30
1.033	0.79	7.100	1.30	13.167	5.34	19.23	1.30
1.050	0.79	7.117	1.30	13.183	5.34	19.25	1.30
1.067	0.79	7.133	1.30	13.200	5.34	19.27	1.30
1.083	0.79	7.150	1.30	13.217	5.34	19.28	1.30
1.100	0.79	7.167	1.30	13.233	5.34	19.30	1.30
1.117	0.79	7.183	1.30	13.250	5.34	19.32	1.30
1.133	0.79	7.200	1.30	13.267	3.90	19.33	1.30
1.150	0.79	7.217	1.30	13.283	3.90	19.35	1.30
1.167	0.79	7.233	1.30	13.300	3.90	19.37	1.30
1.183	0.79	7.250	1.30	13.317	3.90	19.38	1.30
1.200	0.79	7.267	1.59	13.333	3.90	19.40	1.30
1.217	0.79	7.283	1.59	13.350	3.90	19.42	1.30
1.233	0.79	7.300	1.59	13.367	3.90	19.43	1.30
1.250	0.79	7.317	1.59	13.383	3.90	19.45	1.30
1.267	0.79	7.333	1.59	13.400	3.90	19.47	1.30
1.283	0.79	7.350	1.59	13.417	3.90	19.48	1.30
1.300	0.79	7.367	1.59	13.433	3.90	19.50	1.30
1.317	0.79	7.383	1.59	13.450	3.90	19.52	1.30
1.333	0.79	7.400	1.59	13.467	3.90	19.53	1.30
1.350	0.79	7.417	1.59	13.483	3.90	19.55	1.30
1.367	0.79	7.433	1.59	13.500	3.90	19.57	1.30
1.383	0.79	7.450	1.59	13.517	3.90	19.58	1.30
1.400	0.79	7.467	1.59	13.533	3.90	19.60	1.30
1.417	0.79	7.483	1.59	13.550	3.90	19.62	1.30
1.433	0.79	7.500	1.59	13.567	3.90	19.63	1.30
1.450	0.79	7.517	1.59	13.583	3.90	19.65	1.30
1.467	0.79	7.533	1.59	13.600	3.90	19.67	1.30
1.483	0.79	7.550	1.59	13.617	3.90	19.68	1.30
1.500	0.79	7.567	1.59	13.633	3.90	19.70	1.30
1.517	0.79	7.583	1.59	13.650	3.90	19.72	1.30
1.533	0.79	7.600	1.59	13.667	3.90	19.73	1.30
1.550	0.79	7.617	1.59	13.683	3.90	19.75	1.30
1.567	0.79	7.633	1.59	13.700	3.90	19.77	1.30
1.583	0.79	7.650	1.59	13.717	3.90	19.78	1.30
1.600	0.79	7.667	1.59	13.733	3.90	19.80	1.30
1.617	0.79	7.683	1.59	13.750	3.90	19.82	1.30
1.633	0.79	7.700	1.59	13.767	3.03	19.83	1.30
1.650	0.79	7.717	1.59	13.783	3.03	19.85	1.30
1.667	0.79	7.733	1.59	13.800	3.03	19.87	1.30
1.683	0.79	7.750	1.59	13.817	3.03	19.88	1.30
1.700	0.79	7.767	1.59	13.833	3.03	19.90	1.30
1.717	0.79	7.783	1.59	13.850	3.03	19.92	1.30
1.733	0.79	7.800	1.59	13.867	3.03	19.93	1.30
1.750	0.79	7.817	1.59	13.883	3.03	19.95	1.30
1.767	0.79	7.833	1.59	13.900	3.03	19.97	1.30
1.783	0.79	7.850	1.59	13.917	3.03	19.98	1.30
1.800	0.79	7.867	1.59	13.933	3.03	20.00	1.30
1.817	0.79	7.883	1.59	13.950	3.03	20.02	1.30
1.833	0.79	7.900	1.59	13.967	3.03	20.03	1.30
1.850	0.79	7.917	1.59	13.983	3.03	20.05	1.30
1.867	0.79	7.933	1.59	14.000	3.03	20.07	1.30
1.883	0.79	7.950	1.59	14.017	3.03	20.08	1.30
1.900	0.79	7.967	1.59	14.033	3.03	20.10	1.30
1.917	0.79	7.983	1.59	14.050	3.03	20.12	1.30
1.933	0.79	8.000	1.59	14.067	3.03	20.13	1.30
1.950	0.79	8.017	1.59	14.083	3.03	20.15	1.30
1.967	0.79	8.033	1.59	14.100	3.03	20.17	1.30
1.983	0.79	8.050	1.59	14.117	3.03	20.18	1.30
2.000	0.79	8.067	1.59	14.133	3.03	20.20	1.30
2.017	0.79	8.083	1.59	14.150	3.03	20.22	1.30
2.033	0.79	8.100	1.59	14.167	3.03	20.23	1.30
2.050	0.79	8.117	1.59	14.183	3.03	20.25	1.30
2.067	0.79	8.133	1.59	14.200	3.03	20.27	0.87
2.083	0.79	8.150	1.59	14.217	3.03	20.28	0.87
2.100	0.79	8.167	1.59	14.233	3.03	20.30	0.87
2.117	0.79	8.183	1.59	14.250	3.03	20.32	0.87
2.133	0.79	8.200	1.59	14.267	2.17	20.33	0.87
2.150	0.79	8.217	1.59	14.283	2.17	20.35	0.87
2.167	0.79	8.233	1.59	14.300	2.17	20.37	0.87
2.183	0.79	8.250	1.59	14.317	2.17	20.38	0.87
2.200	0.79	8.267	1.88	14.333	2.17	20.40	0.87
2.217	0.79	8.283	1.88	14.350	2.17	20.42	0.87
2.233	0.79	8.300	1.88	14.367	2.17	20.43	0.87
2.250	0.79	8.317	1.88	14.383	2.17	20.45	0.87
2.267	0.94	8.333	1.88	14.400	2.17	20.47	0.87
2.283	0.94	8.350	1.88	14.417	2.17	20.48	0.87
2.300	0.94	8.367	1.88	14.433	2.17	20.50	0.87
2.317	0.94	8.383	1.88	14.450	2.17	20.52	0.87
2.333	0.94	8.400	1.88	14.467	2.17	20.53	0.87
2.350	0.94	8.417	1.88	14.483	2.17	20.55	0.87
2.367	0.94	8.433	1.88	14.500	2.17	20.57	0.87
2.383	0.94	8.450	1.88	14.517	2.17	20.58	0.87
2.400	0.94	8.467	1.88	14.533	2.17	20.60	0.87
2.417	0.94	8.483	1.88	14.550	2.17	20.62	0.87
2.433	0.94	8.500	1.88	14.567	2.17	20.63	0.87
2.450	0.94	8.517	1.88	14.583	2.17	20.65	0.87
2.467	0.94	8.533	1.88	14.600	2.17	20.67	0.87

2.483	0.94	8.550	1.88	14.617	2.17	20.68	0.87
2.500	0.94	8.567	1.88	14.633	2.17	20.70	0.87
2.517	0.94	8.583	1.88	14.650	2.17	20.72	0.87
2.533	0.94	8.600	1.88	14.667	2.17	20.73	0.87
2.550	0.94	8.617	1.88	14.683	2.17	20.75	0.87
2.567	0.94	8.633	1.88	14.700	2.17	20.77	0.87
2.583	0.94	8.650	1.88	14.717	2.17	20.78	0.87
2.600	0.94	8.667	1.88	14.733	2.17	20.80	0.87
2.617	0.94	8.683	1.88	14.750	2.17	20.82	0.87
2.633	0.94	8.700	1.88	14.767	2.17	20.83	0.87
2.650	0.94	8.717	1.88	14.783	2.17	20.85	0.87
2.667	0.94	8.733	1.88	14.800	2.17	20.87	0.87
2.683	0.94	8.750	1.88	14.817	2.17	20.88	0.87
2.700	0.94	8.767	2.02	14.833	2.17	20.90	0.87
2.717	0.94	8.783	2.02	14.850	2.17	20.92	0.87
2.733	0.94	8.800	2.02	14.867	2.17	20.93	0.87
2.750	0.94	8.817	2.02	14.883	2.17	20.95	0.87
2.767	0.94	8.833	2.02	14.900	2.17	20.97	0.87
2.783	0.94	8.850	2.02	14.917	2.17	20.98	0.87
2.800	0.94	8.867	2.02	14.933	2.17	21.00	0.87
2.817	0.94	8.883	2.02	14.950	2.17	21.02	0.87
2.833	0.94	8.900	2.02	14.967	2.17	21.03	0.87
2.850	0.94	8.917	2.02	14.983	2.17	21.05	0.87
2.867	0.94	8.933	2.02	15.000	2.17	21.07	0.87
2.883	0.94	8.950	2.02	15.017	2.17	21.08	0.87
2.900	0.94	8.967	2.02	15.033	2.17	21.10	0.87
2.917	0.94	8.983	2.02	15.050	2.17	21.12	0.87
2.933	0.94	9.000	2.02	15.067	2.17	21.13	0.87
2.950	0.94	9.017	2.02	15.083	2.17	21.15	0.87
2.967	0.94	9.033	2.02	15.100	2.17	21.17	0.87
2.983	0.94	9.050	2.02	15.117	2.17	21.18	0.87
3.000	0.94	9.067	2.02	15.133	2.17	21.20	0.87
3.017	0.94	9.083	2.02	15.150	2.17	21.22	0.87
3.033	0.94	9.100	2.02	15.167	2.17	21.23	0.87
3.050	0.94	9.117	2.02	15.183	2.17	21.25	0.87
3.067	0.94	9.133	2.02	15.200	2.17	21.27	0.87
3.083	0.94	9.150	2.02	15.217	2.17	21.28	0.87
3.100	0.94	9.167	2.02	15.233	2.17	21.30	0.87
3.117	0.94	9.183	2.02	15.250	2.17	21.32	0.87
3.133	0.94	9.200	2.02	15.267	2.17	21.33	0.87
3.150	0.94	9.217	2.02	15.283	2.17	21.35	0.87
3.167	0.94	9.233	2.02	15.300	2.17	21.37	0.87
3.183	0.94	9.250	2.02	15.317	2.17	21.38	0.87
3.200	0.94	9.267	2.31	15.333	2.17	21.40	0.87
3.217	0.94	9.283	2.31	15.350	2.17	21.42	0.87
3.233	0.94	9.300	2.31	15.367	2.17	21.43	0.87
3.250	0.94	9.317	2.31	15.383	2.17	21.45	0.87
3.267	0.94	9.333	2.31	15.400	2.17	21.47	0.87
3.283	0.94	9.350	2.31	15.417	2.17	21.48	0.87
3.300	0.94	9.367	2.31	15.433	2.17	21.50	0.87
3.317	0.94	9.383	2.31	15.450	2.17	21.52	0.87
3.333	0.94	9.400	2.31	15.467	2.17	21.53	0.87
3.350	0.94	9.417	2.31	15.483	2.17	21.55	0.87
3.367	0.94	9.433	2.31	15.500	2.17	21.57	0.87
3.383	0.94	9.450	2.31	15.517	2.17	21.58	0.87
3.400	0.94	9.467	2.31	15.533	2.17	21.60	0.87
3.417	0.94	9.483	2.31	15.550	2.17	21.62	0.87
3.433	0.94	9.500	2.31	15.567	2.17	21.63	0.87
3.450	0.94	9.517	2.31	15.583	2.17	21.65	0.87
3.467	0.94	9.533	2.31	15.600	2.17	21.67	0.87
3.483	0.94	9.550	2.31	15.617	2.17	21.68	0.87
3.500	0.94	9.567	2.31	15.633	2.17	21.70	0.87
3.517	0.94	9.583	2.31	15.650	2.17	21.72	0.87
3.533	0.94	9.600	2.31	15.667	2.17	21.73	0.87
3.550	0.94	9.617	2.31	15.683	2.17	21.75	0.87
3.567	0.94	9.633	2.31	15.700	2.17	21.77	0.87
3.583	0.94	9.650	2.31	15.717	2.17	21.78	0.87
3.600	0.94	9.667	2.31	15.733	2.17	21.80	0.87
3.617	0.94	9.683	2.31	15.750	2.17	21.82	0.87
3.633	0.94	9.700	2.31	15.767	2.17	21.83	0.87
3.650	0.94	9.717	2.31	15.783	2.17	21.85	0.87
3.667	0.94	9.733	2.31	15.800	2.17	21.87	0.87
3.683	0.94	9.750	2.31	15.817	2.17	21.88	0.87
3.700	0.94	9.767	2.60	15.833	2.17	21.90	0.87
3.717	0.94	9.783	2.60	15.850	2.17	21.92	0.87
3.733	0.94	9.800	2.60	15.867	2.17	21.93	0.87
3.750	0.94	9.817	2.60	15.883	2.17	21.95	0.87
3.767	0.94	9.833	2.60	15.900	2.17	21.97	0.87
3.783	0.94	9.850	2.60	15.917	2.17	21.98	0.87
3.800	0.94	9.867	2.60	15.933	2.17	22.00	0.87
3.817	0.94	9.883	2.60	15.950	2.17	22.02	0.87
3.833	0.94	9.900	2.60	15.967	2.17	22.03	0.87
3.850	0.94	9.917	2.60	15.983	2.17	22.05	0.87
3.867	0.94	9.933	2.60	16.000	2.17	22.07	0.87
3.883	0.94	9.950	2.60	16.017	2.17	22.08	0.87
3.900	0.94	9.967	2.60	16.033	2.17	22.10	0.87
3.917	0.94	9.983	2.60	16.050	2.17	22.12	0.87
3.933	0.94	10.000	2.60	16.067	2.17	22.13	0.87
3.950	0.94	10.017	2.60	16.083	2.17	22.15	0.87
3.967	0.94	10.033	2.60	16.100	2.17	22.17	0.87
3.983	0.94	10.050	2.60	16.117	2.17	22.18	0.87
4.000	0.94	10.067	2.60	16.133	2.17	22.20	0.87
4.017	0.94	10.083	2.60	16.150	2.17	22.22	0.87
4.033	0.94	10.100	2.60	16.167	2.17	22.23	0.87
4.050	0.94	10.117	2.60	16.183	2.17	22.25	0.87
4.067	0.94	10.133	2.60	16.200	2.17	22.27	0.87
4.083	0.94	10.150	2.60	16.217	2.17	22.28	0.87
4.100	0.94	10.167	2.60	16.233	2.17	22.30	0.87
4.117	0.94	10.183	2.60	16.250	2.17	22.32	0.87
4.133	0.94	10.200	2.60	16.267	1.30	22.33	0.87

4.150	0.94	10.217	2.60	16.283	1.30	22.35	0.87
4.167	0.94	10.233	2.60	16.300	1.30	22.37	0.87
4.183	0.94	10.250	2.60	16.317	1.30	22.38	0.87
4.200	0.94	10.267	3.32	16.333	1.30	22.40	0.87
4.217	0.94	10.283	3.32	16.350	1.30	22.42	0.87
4.233	0.94	10.300	3.32	16.367	1.30	22.43	0.87
4.250	0.94	10.317	3.32	16.383	1.30	22.45	0.87
4.267	1.16	10.333	3.32	16.400	1.30	22.47	0.87
4.283	1.16	10.350	3.32	16.417	1.30	22.48	0.87
4.300	1.16	10.367	3.32	16.433	1.30	22.50	0.87
4.317	1.16	10.383	3.32	16.450	1.30	22.52	0.87
4.333	1.16	10.400	3.32	16.467	1.30	22.53	0.87
4.350	1.16	10.417	3.32	16.483	1.30	22.55	0.87
4.367	1.16	10.433	3.32	16.500	1.30	22.57	0.87
4.383	1.16	10.450	3.32	16.517	1.30	22.58	0.87
4.400	1.16	10.467	3.32	16.533	1.30	22.60	0.87
4.417	1.16	10.483	3.32	16.550	1.30	22.62	0.87
4.433	1.16	10.500	3.32	16.567	1.30	22.63	0.87
4.450	1.16	10.517	3.32	16.583	1.30	22.65	0.87
4.467	1.16	10.533	3.32	16.600	1.30	22.67	0.87
4.483	1.16	10.550	3.32	16.617	1.30	22.68	0.87
4.500	1.16	10.567	3.32	16.633	1.30	22.70	0.87
4.517	1.16	10.583	3.32	16.650	1.30	22.72	0.87
4.533	1.16	10.600	3.32	16.667	1.30	22.73	0.87
4.550	1.16	10.617	3.32	16.683	1.30	22.75	0.87
4.567	1.16	10.633	3.32	16.700	1.30	22.77	0.87
4.583	1.16	10.650	3.32	16.717	1.30	22.78	0.87
4.600	1.16	10.667	3.32	16.733	1.30	22.80	0.87
4.617	1.16	10.683	3.32	16.750	1.30	22.82	0.87
4.633	1.16	10.700	3.32	16.767	1.30	22.83	0.87
4.650	1.16	10.717	3.32	16.783	1.30	22.85	0.87
4.667	1.16	10.733	3.32	16.800	1.30	22.87	0.87
4.683	1.16	10.750	3.32	16.817	1.30	22.88	0.87
4.700	1.16	10.767	4.48	16.833	1.30	22.90	0.87
4.717	1.16	10.783	4.48	16.850	1.30	22.92	0.87
4.733	1.16	10.800	4.48	16.867	1.30	22.93	0.87
4.750	1.16	10.817	4.48	16.883	1.30	22.95	0.87
4.767	1.16	10.833	4.48	16.900	1.30	22.97	0.87
4.783	1.16	10.850	4.48	16.917	1.30	22.98	0.87
4.800	1.16	10.867	4.48	16.933	1.30	23.00	0.87
4.817	1.16	10.883	4.48	16.950	1.30	23.02	0.87
4.833	1.16	10.900	4.48	16.967	1.30	23.03	0.87
4.850	1.16	10.917	4.48	16.983	1.30	23.05	0.87
4.867	1.16	10.933	4.48	17.000	1.30	23.07	0.87
4.883	1.16	10.950	4.48	17.017	1.30	23.08	0.87
4.900	1.16	10.967	4.48	17.033	1.30	23.10	0.87
4.917	1.16	10.983	4.48	17.050	1.30	23.12	0.87
4.933	1.16	11.000	4.48	17.067	1.30	23.13	0.87
4.950	1.16	11.017	4.48	17.083	1.30	23.15	0.87
4.967	1.16	11.033	4.48	17.100	1.30	23.17	0.87
4.983	1.16	11.050	4.48	17.117	1.30	23.18	0.87
5.000	1.16	11.067	4.48	17.133	1.30	23.20	0.87
5.017	1.16	11.083	4.48	17.150	1.30	23.22	0.87
5.033	1.16	11.100	4.48	17.167	1.30	23.23	0.87
5.050	1.16	11.117	4.48	17.183	1.30	23.25	0.87
5.067	1.16	11.133	4.48	17.200	1.30	23.27	0.87
5.083	1.16	11.150	4.48	17.217	1.30	23.28	0.87
5.100	1.16	11.167	4.48	17.233	1.30	23.30	0.87
5.117	1.16	11.183	4.48	17.250	1.30	23.32	0.87
5.133	1.16	11.200	4.48	17.267	1.30	23.33	0.87
5.150	1.16	11.217	4.48	17.283	1.30	23.35	0.87
5.167	1.16	11.233	4.48	17.300	1.30	23.37	0.87
5.183	1.16	11.250	4.48	17.317	1.30	23.38	0.87
5.200	1.16	11.267	6.93	17.333	1.30	23.40	0.87
5.217	1.16	11.283	6.93	17.350	1.30	23.42	0.87
5.233	1.16	11.300	6.93	17.367	1.30	23.43	0.87
5.250	1.16	11.317	6.93	17.383	1.30	23.45	0.87
5.267	1.16	11.333	6.93	17.400	1.30	23.47	0.87
5.283	1.16	11.350	6.93	17.417	1.30	23.48	0.87
5.300	1.16	11.367	6.93	17.433	1.30	23.50	0.87
5.317	1.16	11.383	6.93	17.450	1.30	23.52	0.87
5.333	1.16	11.400	6.93	17.467	1.30	23.53	0.87
5.350	1.16	11.417	6.93	17.483	1.30	23.55	0.87
5.367	1.16	11.433	6.93	17.500	1.30	23.57	0.87
5.383	1.16	11.450	6.93	17.517	1.30	23.58	0.87
5.400	1.16	11.467	6.93	17.533	1.30	23.60	0.87
5.417	1.16	11.483	6.93	17.550	1.30	23.62	0.87
5.433	1.16	11.500	6.93	17.567	1.30	23.63	0.87
5.450	1.16	11.517	6.93	17.583	1.30	23.65	0.87
5.467	1.16	11.533	6.93	17.600	1.30	23.67	0.87
5.483	1.16	11.550	6.93	17.617	1.30	23.68	0.87
5.500	1.16	11.567	6.93	17.633	1.30	23.70	0.87
5.517	1.16	11.583	6.93	17.650	1.30	23.72	0.87
5.533	1.16	11.600	6.93	17.667	1.30	23.73	0.87
5.550	1.16	11.617	6.93	17.683	1.30	23.75	0.87
5.567	1.16	11.633	6.93	17.700	1.30	23.77	0.87
5.583	1.16	11.650	6.93	17.717	1.30	23.78	0.87
5.600	1.16	11.667	6.93	17.733	1.30	23.80	0.87
5.617	1.16	11.683	6.93	17.750	1.30	23.82	0.87
5.633	1.16	11.700	6.93	17.767	1.30	23.83	0.87
5.650	1.16	11.717	6.93	17.783	1.30	23.85	0.87
5.667	1.16	11.733	6.93	17.800	1.30	23.87	0.87
5.683	1.16	11.750	6.93	17.817	1.30	23.88	0.87
5.700	1.16	11.767	21.37	17.833	1.30	23.90	0.87
5.717	1.16	11.783	21.37	17.850	1.30	23.92	0.87
5.733	1.16	11.800	21.37	17.867	1.30	23.93	0.87
5.750	1.16	11.817	21.37	17.883	1.30	23.95	0.87
5.767	1.16	11.833	21.37	17.900	1.30	23.97	0.87
5.783	1.16	11.850	21.37	17.917	1.30	23.98	0.87
5.800	1.16	11.867	21.37	17.933	1.30	24.00	0.87

5.817	1.16	11.883	21.37	17.950	1.30	24.02	0.87
5.833	1.16	11.900	21.37	17.967	1.30	24.03	0.87
5.850	1.16	11.917	21.37	17.983	1.30	24.05	0.87
5.867	1.16	11.933	21.37	18.000	1.30	24.07	0.87
5.883	1.16	11.950	21.37	18.017	1.30	24.08	0.87
5.900	1.16	11.967	21.37	18.033	1.30	24.10	0.87
5.917	1.16	11.983	21.37	18.050	1.30	24.12	0.87
5.933	1.16	12.000	21.37	18.067	1.30	24.13	0.87
5.950	1.16	12.017	88.34	18.083	1.30	24.15	0.87
5.967	1.16	12.033	88.39	18.100	1.30	24.17	0.87
5.983	1.16	12.050	88.39	18.117	1.30	24.18	0.87
6.000	1.16	12.067	88.39	18.133	1.30	24.20	0.87
6.017	1.16	12.083	88.39	18.150	1.30	24.22	0.87
6.033	1.16	12.100	88.39	18.167	1.30	24.23	0.87
6.050	1.16	12.117	88.39	18.183	1.30	24.25	0.87
6.067	1.16	12.133	88.39	18.200	1.30		

Max.Eff.Inten.(mm/hr)=	88.39	18.39		
over (min)	5.00	3.00		
Storage Coeff. (min)=	0.94 (ii)	2.21 (ii)		
Unit Hyd. Tpeak (min)=	5.00	3.00		
Unit Hyd. peak (cms)=	0.48	0.45		
			TOTALS	
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)	
TIME TO PEAK (hrs)=	12.25	12.25	12.25	
RUNOFF VOLUME (mm)=	70.21	12.77	67.33	
TOTAL RAINFALL (mm)=	72.21	72.21	72.21	
RUNOFF COEFFICIENT =	0.97	0.18	0.93	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:10- 25yr-24hr-SCS **
****

CALIB					
STANDHYD (0001)	Area (ha)=	0.09			
ID= 1 DT= 1.0 min	Total Imp(%)=	95.00	Dir. Conn.(%)=	95.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00

Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.38	12.150	105.61	18.22	1.55
0.033	0.00	6.100	1.38	12.167	105.61	18.23	1.55
0.050	0.00	6.117	1.38	12.183	105.61	18.25	1.55
0.067	0.00	6.133	1.38	12.200	105.61	18.27	1.55
0.083	0.00	6.150	1.38	12.217	105.61	18.28	1.55
0.100	0.00	6.167	1.38	12.233	105.61	18.30	1.55
0.117	0.00	6.183	1.38	12.250	105.61	18.32	1.55
0.133	0.00	6.200	1.38	12.267	12.51	18.33	1.55
0.150	0.00	6.217	1.38	12.283	12.42	18.35	1.55
0.167	0.00	6.233	1.38	12.300	12.42	18.37	1.55
0.183	0.00	6.250	1.38	12.317	12.42	18.38	1.55
0.200	0.00	6.267	1.55	12.333	12.42	18.40	1.55
0.217	0.00	6.283	1.55	12.350	12.42	18.42	1.55
0.233	0.00	6.300	1.55	12.367	12.42	18.43	1.55
0.250	0.00	6.317	1.55	12.383	12.42	18.45	1.55
0.267	0.95	6.333	1.55	12.400	12.42	18.47	1.55
0.283	0.95	6.350	1.55	12.417	12.42	18.48	1.55
0.300	0.95	6.367	1.55	12.433	12.42	18.50	1.55
0.317	0.95	6.383	1.55	12.450	12.42	18.52	1.55
0.333	0.95	6.400	1.55	12.467	12.42	18.53	1.55
0.350	0.95	6.417	1.55	12.483	12.42	18.55	1.55
0.367	0.95	6.433	1.55	12.500	12.42	18.57	1.55
0.383	0.95	6.450	1.55	12.517	12.42	18.58	1.55
0.400	0.95	6.467	1.55	12.533	12.42	18.60	1.55
0.417	0.95	6.483	1.55	12.550	12.42	18.62	1.55
0.433	0.95	6.500	1.55	12.567	12.42	18.63	1.55
0.450	0.95	6.517	1.55	12.583	12.42	18.65	1.55
0.467	0.95	6.533	1.55	12.600	12.42	18.67	1.55
0.483	0.95	6.550	1.55	12.617	12.42	18.68	1.55
0.500	0.95	6.567	1.55	12.633	12.42	18.70	1.55
0.517	0.95	6.583	1.55	12.650	12.42	18.72	1.55
0.533	0.95	6.600	1.55	12.667	12.42	18.73	1.55
0.550	0.95	6.617	1.55	12.683	12.42	18.75	1.55
0.567	0.95	6.633	1.55	12.700	12.42	18.77	1.55
0.583	0.95	6.650	1.55	12.717	12.42	18.78	1.55
0.600	0.95	6.667	1.55	12.733	12.42	18.80	1.55
0.617	0.95	6.683	1.55	12.750	12.42	18.82	1.55
0.633	0.95	6.700	1.55	12.767	6.39	18.83	1.55
0.650	0.95	6.717	1.55	12.783	6.38	18.85	1.55
0.667	0.95	6.733	1.55	12.800	6.38	18.87	1.55
0.683	0.95	6.750	1.55	12.817	6.38	18.88	1.55

0.700	0.95	6.767	1.55	12.833	6.38	18.90	1.55
0.717	0.95	6.783	1.55	12.850	6.38	18.92	1.55
0.733	0.95	6.800	1.55	12.867	6.38	18.93	1.55
0.750	0.95	6.817	1.55	12.883	6.38	18.95	1.55
0.767	0.95	6.833	1.55	12.900	6.38	18.97	1.55
0.783	0.95	6.850	1.55	12.917	6.38	18.98	1.55
0.800	0.95	6.867	1.55	12.933	6.38	19.00	1.55
0.817	0.95	6.883	1.55	12.950	6.38	19.02	1.55
0.833	0.95	6.900	1.55	12.967	6.38	19.03	1.55
0.850	0.95	6.917	1.55	12.983	6.38	19.05	1.55
0.867	0.95	6.933	1.55	13.000	6.38	19.07	1.55
0.883	0.95	6.950	1.55	13.017	6.38	19.08	1.55
0.900	0.95	6.967	1.55	13.033	6.38	19.10	1.55
0.917	0.95	6.983	1.55	13.050	6.38	19.12	1.55
0.933	0.95	7.000	1.55	13.067	6.38	19.13	1.55
0.950	0.95	7.017	1.55	13.083	6.38	19.15	1.55
0.967	0.95	7.033	1.55	13.100	6.38	19.17	1.55
0.983	0.95	7.050	1.55	13.117	6.38	19.18	1.55
1.000	0.95	7.067	1.55	13.133	6.38	19.20	1.55
1.017	0.95	7.083	1.55	13.150	6.38	19.22	1.55
1.033	0.95	7.100	1.55	13.167	6.38	19.23	1.55
1.050	0.95	7.117	1.55	13.183	6.38	19.25	1.55
1.067	0.95	7.133	1.55	13.200	6.38	19.27	1.55
1.083	0.95	7.150	1.55	13.217	6.38	19.28	1.55
1.100	0.95	7.167	1.55	13.233	6.38	19.30	1.55
1.117	0.95	7.183	1.55	13.250	6.38	19.32	1.55
1.133	0.95	7.200	1.55	13.267	4.66	19.33	1.55
1.150	0.95	7.217	1.55	13.283	4.66	19.35	1.55
1.167	0.95	7.233	1.55	13.300	4.66	19.37	1.55
1.183	0.95	7.250	1.55	13.317	4.66	19.38	1.55
1.200	0.95	7.267	1.90	13.333	4.66	19.40	1.55
1.217	0.95	7.283	1.90	13.350	4.66	19.42	1.55
1.233	0.95	7.300	1.90	13.367	4.66	19.43	1.55
1.250	0.95	7.317	1.90	13.383	4.66	19.45	1.55
1.267	0.95	7.333	1.90	13.400	4.66	19.47	1.55
1.283	0.95	7.350	1.90	13.417	4.66	19.48	1.55
1.300	0.95	7.367	1.90	13.433	4.66	19.50	1.55
1.317	0.95	7.383	1.90	13.450	4.66	19.52	1.55
1.333	0.95	7.400	1.90	13.467	4.66	19.53	1.55
1.350	0.95	7.417	1.90	13.483	4.66	19.55	1.55
1.367	0.95	7.433	1.90	13.500	4.66	19.57	1.55
1.383	0.95	7.450	1.90	13.517	4.66	19.58	1.55
1.400	0.95	7.467	1.90	13.533	4.66	19.60	1.55
1.417	0.95	7.483	1.90	13.550	4.66	19.62	1.55
1.433	0.95	7.500	1.90	13.567	4.66	19.63	1.55
1.450	0.95	7.517	1.90	13.583	4.66	19.65	1.55
1.467	0.95	7.533	1.90	13.600	4.66	19.67	1.55
1.483	0.95	7.550	1.90	13.617	4.66	19.68	1.55
1.500	0.95	7.567	1.90	13.633	4.66	19.70	1.55
1.517	0.95	7.583	1.90	13.650	4.66	19.72	1.55
1.533	0.95	7.600	1.90	13.667	4.66	19.73	1.55
1.550	0.95	7.617	1.90	13.683	4.66	19.75	1.55
1.567	0.95	7.633	1.90	13.700	4.66	19.77	1.55
1.583	0.95	7.650	1.90	13.717	4.66	19.78	1.55
1.600	0.95	7.667	1.90	13.733	4.66	19.80	1.55
1.617	0.95	7.683	1.90	13.750	4.66	19.82	1.55
1.633	0.95	7.700	1.90	13.767	3.63	19.83	1.55
1.650	0.95	7.717	1.90	13.783	3.62	19.85	1.55
1.667	0.95	7.733	1.90	13.800	3.62	19.87	1.55
1.683	0.95	7.750	1.90	13.817	3.62	19.88	1.55
1.700	0.95	7.767	1.90	13.833	3.62	19.90	1.55
1.717	0.95	7.783	1.90	13.850	3.62	19.92	1.55
1.733	0.95	7.800	1.90	13.867	3.62	19.93	1.55
1.750	0.95	7.817	1.90	13.883	3.62	19.95	1.55
1.767	0.95	7.833	1.90	13.900	3.62	19.97	1.55
1.783	0.95	7.850	1.90	13.917	3.62	19.98	1.55
1.800	0.95	7.867	1.90	13.933	3.62	20.00	1.55
1.817	0.95	7.883	1.90	13.950	3.62	20.02	1.55
1.833	0.95	7.900	1.90	13.967	3.62	20.03	1.55
1.850	0.95	7.917	1.90	13.983	3.62	20.05	1.55
1.867	0.95	7.933	1.90	14.000	3.62	20.07	1.55
1.883	0.95	7.950	1.90	14.017	3.62	20.08	1.55
1.900	0.95	7.967	1.90	14.033	3.62	20.10	1.55
1.917	0.95	7.983	1.90	14.050	3.62	20.12	1.55
1.933	0.95	8.000	1.90	14.067	3.62	20.13	1.55
1.950	0.95	8.017	1.90	14.083	3.62	20.15	1.55
1.967	0.95	8.033	1.90	14.100	3.62	20.17	1.55
1.983	0.95	8.050	1.90	14.117	3.62	20.18	1.55
2.000	0.95	8.067	1.90	14.133	3.62	20.20	1.55
2.017	0.95	8.083	1.90	14.150	3.62	20.22	1.55
2.033	0.95	8.100	1.90	14.167	3.62	20.23	1.55
2.050	0.95	8.117	1.90	14.183	3.62	20.25	1.55
2.067	0.95	8.133	1.90	14.200	3.62	20.27	1.04
2.083	0.95	8.150	1.90	14.217	3.62	20.28	1.04
2.100	0.95	8.167	1.90	14.233	3.62	20.30	1.04
2.117	0.95	8.183	1.90	14.250	3.62	20.32	1.04
2.133	0.95	8.200	1.90	14.267	2.59	20.33	1.04
2.150	0.95	8.217	1.90	14.283	2.59	20.35	1.04
2.167	0.95	8.233	1.90	14.300	2.59	20.37	1.04
2.183	0.95	8.250	1.90	14.317	2.59	20.38	1.04
2.200	0.95	8.267	2.24	14.333	2.59	20.40	1.04
2.217	0.95	8.283	2.24	14.350	2.59	20.42	1.04
2.233	0.95	8.300	2.24	14.367	2.59	20.43	1.04
2.250	0.95	8.317	2.24	14.383	2.59	20.45	1.04
2.267	1.12	8.333	2.24	14.400	2.59	20.47	1.04
2.283	1.12	8.350	2.24	14.417	2.59	20.48	1.04
2.300	1.12	8.367	2.24	14.433	2.59	20.50	1.04
2.317	1.12	8.383	2.24	14.450	2.59	20.52	1.04
2.333	1.12	8.400	2.24	14.467	2.59	20.53	1.04
2.350	1.12	8.417	2.24	14.483	2.59	20.55	1.04

2.367	1.12	8.433	2.24	14.500	2.59	20.57	1.04
2.383	1.12	8.450	2.24	14.517	2.59	20.58	1.04
2.400	1.12	8.467	2.24	14.533	2.59	20.60	1.04
2.417	1.12	8.483	2.24	14.550	2.59	20.62	1.04
2.433	1.12	8.500	2.24	14.567	2.59	20.63	1.04
2.450	1.12	8.517	2.24	14.583	2.59	20.65	1.04
2.467	1.12	8.533	2.24	14.600	2.59	20.67	1.04
2.483	1.12	8.550	2.24	14.617	2.59	20.68	1.04
2.500	1.12	8.567	2.24	14.633	2.59	20.70	1.04
2.517	1.12	8.583	2.24	14.650	2.59	20.72	1.04
2.533	1.12	8.600	2.24	14.667	2.59	20.73	1.04
2.550	1.12	8.617	2.24	14.683	2.59	20.75	1.04
2.567	1.12	8.633	2.24	14.700	2.59	20.77	1.04
2.583	1.12	8.650	2.24	14.717	2.59	20.78	1.04
2.600	1.12	8.667	2.24	14.733	2.59	20.80	1.04
2.617	1.12	8.683	2.24	14.750	2.59	20.82	1.04
2.633	1.12	8.700	2.24	14.767	2.59	20.83	1.04
2.650	1.12	8.717	2.24	14.783	2.59	20.85	1.04
2.667	1.12	8.733	2.24	14.800	2.59	20.87	1.04
2.683	1.12	8.750	2.24	14.817	2.59	20.88	1.04
2.700	1.12	8.767	2.42	14.833	2.59	20.90	1.04
2.717	1.12	8.783	2.42	14.850	2.59	20.92	1.04
2.733	1.12	8.800	2.42	14.867	2.59	20.93	1.04
2.750	1.12	8.817	2.42	14.883	2.59	20.95	1.04
2.767	1.12	8.833	2.42	14.900	2.59	20.97	1.04
2.783	1.12	8.850	2.42	14.917	2.59	20.98	1.04
2.800	1.12	8.867	2.42	14.933	2.59	21.00	1.04
2.817	1.12	8.883	2.42	14.950	2.59	21.02	1.04
2.833	1.12	8.900	2.42	14.967	2.59	21.03	1.04
2.850	1.12	8.917	2.42	14.983	2.59	21.05	1.04
2.867	1.12	8.933	2.42	15.000	2.59	21.07	1.04
2.883	1.12	8.950	2.42	15.017	2.59	21.08	1.04
2.900	1.12	8.967	2.42	15.033	2.59	21.10	1.04
2.917	1.12	8.983	2.42	15.050	2.59	21.12	1.04
2.933	1.12	9.000	2.42	15.067	2.59	21.13	1.04
2.950	1.12	9.017	2.42	15.083	2.59	21.15	1.04
2.967	1.12	9.033	2.42	15.100	2.59	21.17	1.04
2.983	1.12	9.050	2.42	15.117	2.59	21.18	1.04
3.000	1.12	9.067	2.42	15.133	2.59	21.20	1.04
3.017	1.12	9.083	2.42	15.150	2.59	21.22	1.04
3.033	1.12	9.100	2.42	15.167	2.59	21.23	1.04
3.050	1.12	9.117	2.42	15.183	2.59	21.25	1.04
3.067	1.12	9.133	2.42	15.200	2.59	21.27	1.04
3.083	1.12	9.150	2.42	15.217	2.59	21.28	1.04
3.100	1.12	9.167	2.42	15.233	2.59	21.30	1.04
3.117	1.12	9.183	2.42	15.250	2.59	21.32	1.04
3.133	1.12	9.200	2.42	15.267	2.59	21.33	1.04
3.150	1.12	9.217	2.42	15.283	2.59	21.35	1.04
3.167	1.12	9.233	2.42	15.300	2.59	21.37	1.04
3.183	1.12	9.250	2.42	15.317	2.59	21.38	1.04
3.200	1.12	9.267	2.76	15.333	2.59	21.40	1.04
3.217	1.12	9.283	2.76	15.350	2.59	21.42	1.04
3.233	1.12	9.300	2.76	15.367	2.59	21.43	1.04
3.250	1.12	9.317	2.76	15.383	2.59	21.45	1.04
3.267	1.12	9.333	2.76	15.400	2.59	21.47	1.04
3.283	1.12	9.350	2.76	15.417	2.59	21.48	1.04
3.300	1.12	9.367	2.76	15.433	2.59	21.50	1.04
3.317	1.12	9.383	2.76	15.450	2.59	21.52	1.04
3.333	1.12	9.400	2.76	15.467	2.59	21.53	1.04
3.350	1.12	9.417	2.76	15.483	2.59	21.55	1.04
3.367	1.12	9.433	2.76	15.500	2.59	21.57	1.04
3.383	1.12	9.450	2.76	15.517	2.59	21.58	1.04
3.400	1.12	9.467	2.76	15.533	2.59	21.60	1.04
3.417	1.12	9.483	2.76	15.550	2.59	21.62	1.04
3.433	1.12	9.500	2.76	15.567	2.59	21.63	1.04
3.450	1.12	9.517	2.76	15.583	2.59	21.65	1.04
3.467	1.12	9.533	2.76	15.600	2.59	21.67	1.04
3.483	1.12	9.550	2.76	15.617	2.59	21.68	1.04
3.500	1.12	9.567	2.76	15.633	2.59	21.70	1.04
3.517	1.12	9.583	2.76	15.650	2.59	21.72	1.04
3.533	1.12	9.600	2.76	15.667	2.59	21.73	1.04
3.550	1.12	9.617	2.76	15.683	2.59	21.75	1.04
3.567	1.12	9.633	2.76	15.700	2.59	21.77	1.04
3.583	1.12	9.650	2.76	15.717	2.59	21.78	1.04
3.600	1.12	9.667	2.76	15.733	2.59	21.80	1.04
3.617	1.12	9.683	2.76	15.750	2.59	21.82	1.04
3.633	1.12	9.700	2.76	15.767	2.59	21.83	1.04
3.650	1.12	9.717	2.76	15.783	2.59	21.85	1.04
3.667	1.12	9.733	2.76	15.800	2.59	21.87	1.04
3.683	1.12	9.750	2.76	15.817	2.59	21.88	1.04
3.700	1.12	9.767	3.11	15.833	2.59	21.90	1.04
3.717	1.12	9.783	3.11	15.850	2.59	21.92	1.04
3.733	1.12	9.800	3.11	15.867	2.59	21.93	1.04
3.750	1.12	9.817	3.11	15.883	2.59	21.95	1.04
3.767	1.12	9.833	3.11	15.900	2.59	21.97	1.04
3.783	1.12	9.850	3.11	15.917	2.59	21.98	1.04
3.800	1.12	9.867	3.11	15.933	2.59	22.00	1.04
3.817	1.12	9.883	3.11	15.950	2.59	22.02	1.04
3.833	1.12	9.900	3.11	15.967	2.59	22.03	1.04
3.850	1.12	9.917	3.11	15.983	2.59	22.05	1.04
3.867	1.12	9.933	3.11	16.000	2.59	22.07	1.04
3.883	1.12	9.950	3.11	16.017	2.59	22.08	1.04
3.900	1.12	9.967	3.11	16.033	2.59	22.10	1.04
3.917	1.12	9.983	3.11	16.050	2.59	22.12	1.04
3.933	1.12	10.000	3.11	16.067	2.59	22.13	1.04
3.950	1.12	10.017	3.11	16.083	2.59	22.15	1.04
3.967	1.12	10.033	3.11	16.100	2.59	22.17	1.04
3.983	1.12	10.050	3.11	16.117	2.59	22.18	1.04
4.000	1.12	10.067	3.11	16.133	2.59	22.20	1.04
4.017	1.12	10.083	3.11	16.150	2.59	22.22	1.04

4.033	1.12	10.100	3.11	16.167	2.59	22.23	1.04
4.050	1.12	10.117	3.11	16.183	2.59	22.25	1.04
4.067	1.12	10.133	3.11	16.200	2.59	22.27	1.04
4.083	1.12	10.150	3.11	16.217	2.59	22.28	1.04
4.100	1.12	10.167	3.11	16.233	2.59	22.30	1.04
4.117	1.12	10.183	3.11	16.250	2.59	22.32	1.04
4.133	1.12	10.200	3.11	16.267	1.56	22.33	1.04
4.150	1.12	10.217	3.11	16.283	1.55	22.35	1.04
4.167	1.12	10.233	3.11	16.300	1.55	22.37	1.04
4.183	1.12	10.250	3.11	16.317	1.55	22.38	1.04
4.200	1.12	10.267	3.97	16.333	1.55	22.40	1.04
4.217	1.12	10.283	3.97	16.350	1.55	22.42	1.04
4.233	1.12	10.300	3.97	16.367	1.55	22.43	1.04
4.250	1.12	10.317	3.97	16.383	1.55	22.45	1.04
4.267	1.38	10.333	3.97	16.400	1.55	22.47	1.04
4.283	1.38	10.350	3.97	16.417	1.55	22.48	1.04
4.300	1.38	10.367	3.97	16.433	1.55	22.50	1.04
4.317	1.38	10.383	3.97	16.450	1.55	22.52	1.04
4.333	1.38	10.400	3.97	16.467	1.55	22.53	1.04
4.350	1.38	10.417	3.97	16.483	1.55	22.55	1.04
4.367	1.38	10.433	3.97	16.500	1.55	22.57	1.04
4.383	1.38	10.450	3.97	16.517	1.55	22.58	1.04
4.400	1.38	10.467	3.97	16.533	1.55	22.60	1.04
4.417	1.38	10.483	3.97	16.550	1.55	22.62	1.04
4.433	1.38	10.500	3.97	16.567	1.55	22.63	1.04
4.450	1.38	10.517	3.97	16.583	1.55	22.65	1.04
4.467	1.38	10.533	3.97	16.600	1.55	22.67	1.04
4.483	1.38	10.550	3.97	16.617	1.55	22.68	1.04
4.500	1.38	10.567	3.97	16.633	1.55	22.70	1.04
4.517	1.38	10.583	3.97	16.650	1.55	22.72	1.04
4.533	1.38	10.600	3.97	16.667	1.55	22.73	1.04
4.550	1.38	10.617	3.97	16.683	1.55	22.75	1.04
4.567	1.38	10.633	3.97	16.700	1.55	22.77	1.04
4.583	1.38	10.650	3.97	16.717	1.55	22.78	1.04
4.600	1.38	10.667	3.97	16.733	1.55	22.80	1.04
4.617	1.38	10.683	3.97	16.750	1.55	22.82	1.04
4.633	1.38	10.700	3.97	16.767	1.55	22.83	1.04
4.650	1.38	10.717	3.97	16.783	1.55	22.85	1.04
4.667	1.38	10.733	3.97	16.800	1.55	22.87	1.04
4.683	1.38	10.750	3.97	16.817	1.55	22.88	1.04
4.700	1.38	10.767	5.35	16.833	1.55	22.90	1.04
4.717	1.38	10.783	5.35	16.850	1.55	22.92	1.04
4.733	1.38	10.800	5.35	16.867	1.55	22.93	1.04
4.750	1.38	10.817	5.35	16.883	1.55	22.95	1.04
4.767	1.38	10.833	5.35	16.900	1.55	22.97	1.04
4.783	1.38	10.850	5.35	16.917	1.55	22.98	1.04
4.800	1.38	10.867	5.35	16.933	1.55	23.00	1.04
4.817	1.38	10.883	5.35	16.950	1.55	23.02	1.04
4.833	1.38	10.900	5.35	16.967	1.55	23.03	1.04
4.850	1.38	10.917	5.35	16.983	1.55	23.05	1.04
4.867	1.38	10.933	5.35	17.000	1.55	23.07	1.04
4.883	1.38	10.950	5.35	17.017	1.55	23.08	1.04
4.900	1.38	10.967	5.35	17.033	1.55	23.10	1.04
4.917	1.38	10.983	5.35	17.050	1.55	23.12	1.04
4.933	1.38	11.000	5.35	17.067	1.55	23.13	1.04
4.950	1.38	11.017	5.35	17.083	1.55	23.15	1.04
4.967	1.38	11.033	5.35	17.100	1.55	23.17	1.04
4.983	1.38	11.050	5.35	17.117	1.55	23.18	1.04
5.000	1.38	11.067	5.35	17.133	1.55	23.20	1.04
5.017	1.38	11.083	5.35	17.150	1.55	23.22	1.04
5.033	1.38	11.100	5.35	17.167	1.55	23.23	1.04
5.050	1.38	11.117	5.35	17.183	1.55	23.25	1.04
5.067	1.38	11.133	5.35	17.200	1.55	23.27	1.04
5.083	1.38	11.150	5.35	17.217	1.55	23.28	1.04
5.100	1.38	11.167	5.35	17.233	1.55	23.30	1.04
5.117	1.38	11.183	5.35	17.250	1.55	23.32	1.04
5.133	1.38	11.200	5.35	17.267	1.55	23.33	1.04
5.150	1.38	11.217	5.35	17.283	1.55	23.35	1.04
5.167	1.38	11.233	5.35	17.300	1.55	23.37	1.04
5.183	1.38	11.250	5.35	17.317	1.55	23.38	1.04
5.200	1.38	11.267	8.28	17.333	1.55	23.40	1.04
5.217	1.38	11.283	8.28	17.350	1.55	23.42	1.04
5.233	1.38	11.300	8.28	17.367	1.55	23.43	1.04
5.250	1.38	11.317	8.28	17.383	1.55	23.45	1.04
5.267	1.38	11.333	8.28	17.400	1.55	23.47	1.04
5.283	1.38	11.350	8.28	17.417	1.55	23.48	1.04
5.300	1.38	11.367	8.28	17.433	1.55	23.50	1.04
5.317	1.38	11.383	8.28	17.450	1.55	23.52	1.04
5.333	1.38	11.400	8.28	17.467	1.55	23.53	1.04
5.350	1.38	11.417	8.28	17.483	1.55	23.55	1.04
5.367	1.38	11.433	8.28	17.500	1.55	23.57	1.04
5.383	1.38	11.450	8.28	17.517	1.55	23.58	1.04
5.400	1.38	11.467	8.28	17.533	1.55	23.60	1.04
5.417	1.38	11.483	8.28	17.550	1.55	23.62	1.04
5.433	1.38	11.500	8.28	17.567	1.55	23.63	1.04
5.450	1.38	11.517	8.28	17.583	1.55	23.65	1.04
5.467	1.38	11.533	8.28	17.600	1.55	23.67	1.04
5.483	1.38	11.550	8.28	17.617	1.55	23.68	1.04
5.500	1.38	11.567	8.28	17.633	1.55	23.70	1.04
5.517	1.38	11.583	8.28	17.650	1.55	23.72	1.04
5.533	1.38	11.600	8.28	17.667	1.55	23.73	1.04
5.550	1.38	11.617	8.28	17.683	1.55	23.75	1.04
5.567	1.38	11.633	8.28	17.700	1.55	23.77	1.04
5.583	1.38	11.650	8.28	17.717	1.55	23.78	1.04
5.600	1.38	11.667	8.28	17.733	1.55	23.80	1.04
5.617	1.38	11.683	8.28	17.750	1.55	23.82	1.04
5.633	1.38	11.700	8.28	17.767	1.55	23.83	1.04
5.650	1.38	11.717	8.28	17.783	1.55	23.85	1.04
5.667	1.38	11.733	8.28	17.800	1.55	23.87	1.04
5.683	1.38	11.750	8.28	17.817	1.55	23.88	1.04

5.700	1.38	11.767	25.53	17.833	1.55	23.90	1.04
5.717	1.38	11.783	25.54	17.850	1.55	23.92	1.04
5.733	1.38	11.800	25.54	17.867	1.55	23.93	1.04
5.750	1.38	11.817	25.54	17.883	1.55	23.95	1.04
5.767	1.38	11.833	25.54	17.900	1.55	23.97	1.04
5.783	1.38	11.850	25.54	17.917	1.55	23.98	1.04
5.800	1.38	11.867	25.54	17.933	1.55	24.00	1.04
5.817	1.38	11.883	25.54	17.950	1.55	24.02	1.04
5.833	1.38	11.900	25.54	17.967	1.55	24.03	1.04
5.850	1.38	11.917	25.54	17.983	1.55	24.05	1.04
5.867	1.38	11.933	25.54	18.000	1.55	24.07	1.04
5.883	1.38	11.950	25.54	18.017	1.55	24.08	1.04
5.900	1.38	11.967	25.54	18.033	1.55	24.10	1.04
5.917	1.38	11.983	25.54	18.050	1.55	24.12	1.04
5.933	1.38	12.000	25.54	18.067	1.55	24.13	1.04
5.950	1.38	12.017	105.55	18.083	1.55	24.15	1.04
5.967	1.38	12.033	105.61	18.100	1.55	24.17	1.04
5.983	1.38	12.050	105.61	18.117	1.55	24.18	1.04
6.000	1.38	12.067	105.61	18.133	1.55	24.20	1.04
6.017	1.38	12.083	105.61	18.150	1.55	24.22	1.04
6.033	1.38	12.100	105.61	18.167	1.55	24.23	1.04
6.050	1.38	12.117	105.61	18.183	1.55	24.25	1.04
6.067	1.38	12.133	105.61	18.200	1.55		

Max.Eff.Inten.(mm/hr)=	105.61	25.91	
over (min)	5.00	3.00	
Storage Coeff. (min)=	0.87 (ii)	2.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	3.00	
Unit Hyd. peak (cms)=	0.49	0.47	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.025 (iii)
TIME TO PEAK (hrs)=	12.23	12.25	12.25
RUNOFF VOLUME (mm)=	84.28	17.97	80.96
TOTAL RAINFALL (mm)=	86.28	86.28	86.28
RUNOFF COEFFICIENT =	0.98	0.21	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:11- 50yr-24hr-SCS **
****

CALIB

STANDHYD (0001)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.54	12.150	118.15	18.22	1.74
0.033	0.00	6.100	1.54	12.167	118.15	18.23	1.74
0.050	0.00	6.117	1.54	12.183	118.15	18.25	1.74
0.067	0.00	6.133	1.54	12.200	118.15	18.27	1.74
0.083	0.00	6.150	1.54	12.217	118.15	18.28	1.74
0.100	0.00	6.167	1.54	12.233	118.15	18.30	1.74
0.117	0.00	6.183	1.54	12.250	118.15	18.32	1.74
0.133	0.00	6.200	1.54	12.267	14.00	18.33	1.74
0.150	0.00	6.217	1.54	12.283	13.90	18.35	1.74
0.167	0.00	6.233	1.54	12.300	13.90	18.37	1.74
0.183	0.00	6.250	1.54	12.317	13.90	18.38	1.74
0.200	0.00	6.267	1.74	12.333	13.90	18.40	1.74
0.217	0.00	6.283	1.74	12.350	13.90	18.42	1.74
0.233	0.00	6.300	1.74	12.367	13.90	18.43	1.74
0.250	0.00	6.317	1.74	12.383	13.90	18.45	1.74
0.267	1.06	6.333	1.74	12.400	13.90	18.47	1.74
0.283	1.06	6.350	1.74	12.417	13.90	18.48	1.74
0.300	1.06	6.367	1.74	12.433	13.90	18.50	1.74
0.317	1.06	6.383	1.74	12.450	13.90	18.52	1.74
0.333	1.06	6.400	1.74	12.467	13.90	18.53	1.74
0.350	1.06	6.417	1.74	12.483	13.90	18.55	1.74
0.367	1.06	6.433	1.74	12.500	13.90	18.57	1.74
0.383	1.06	6.450	1.74	12.517	13.90	18.58	1.74
0.400	1.06	6.467	1.74	12.533	13.90	18.60	1.74
0.417	1.06	6.483	1.74	12.550	13.90	18.62	1.74
0.433	1.06	6.500	1.74	12.567	13.90	18.63	1.74
0.450	1.06	6.517	1.74	12.583	13.90	18.65	1.74
0.467	1.06	6.533	1.74	12.600	13.90	18.67	1.74
0.483	1.06	6.550	1.74	12.617	13.90	18.68	1.74
0.500	1.06	6.567	1.74	12.633	13.90	18.70	1.74
0.517	1.06	6.583	1.74	12.650	13.90	18.72	1.74
0.533	1.06	6.600	1.74	12.667	13.90	18.73	1.74
0.550	1.06	6.617	1.74	12.683	13.90	18.75	1.74
0.567	1.06	6.633	1.74	12.700	13.90	18.77	1.74

0.583	1.06	6.650	1.74	12.717	13.90	18.78	1.74
0.600	1.06	6.667	1.74	12.733	13.90	18.80	1.74
0.617	1.06	6.683	1.74	12.750	13.90	18.82	1.74
0.633	1.06	6.700	1.74	12.767	7.15	18.83	1.74
0.650	1.06	6.717	1.74	12.783	7.14	18.85	1.74
0.667	1.06	6.733	1.74	12.800	7.14	18.87	1.74
0.683	1.06	6.750	1.74	12.817	7.14	18.88	1.74
0.700	1.06	6.767	1.74	12.833	7.14	18.90	1.74
0.717	1.06	6.783	1.74	12.850	7.14	18.92	1.74
0.733	1.06	6.800	1.74	12.867	7.14	18.93	1.74
0.750	1.06	6.817	1.74	12.883	7.14	18.95	1.74
0.767	1.06	6.833	1.74	12.900	7.14	18.97	1.74
0.783	1.06	6.850	1.74	12.917	7.14	18.98	1.74
0.800	1.06	6.867	1.74	12.933	7.14	19.00	1.74
0.817	1.06	6.883	1.74	12.950	7.14	19.02	1.74
0.833	1.06	6.900	1.74	12.967	7.14	19.03	1.74
0.850	1.06	6.917	1.74	12.983	7.14	19.05	1.74
0.867	1.06	6.933	1.74	13.000	7.14	19.07	1.74
0.883	1.06	6.950	1.74	13.017	7.14	19.08	1.74
0.900	1.06	6.967	1.74	13.033	7.14	19.10	1.74
0.917	1.06	6.983	1.74	13.050	7.14	19.12	1.74
0.933	1.06	7.000	1.74	13.067	7.14	19.13	1.74
0.950	1.06	7.017	1.74	13.083	7.14	19.15	1.74
0.967	1.06	7.033	1.74	13.100	7.14	19.17	1.74
0.983	1.06	7.050	1.74	13.117	7.14	19.18	1.74
1.000	1.06	7.067	1.74	13.133	7.14	19.20	1.74
1.017	1.06	7.083	1.74	13.150	7.14	19.22	1.74
1.033	1.06	7.100	1.74	13.167	7.14	19.23	1.74
1.050	1.06	7.117	1.74	13.183	7.14	19.25	1.74
1.067	1.06	7.133	1.74	13.200	7.14	19.27	1.74
1.083	1.06	7.150	1.74	13.217	7.14	19.28	1.74
1.100	1.06	7.167	1.74	13.233	7.14	19.30	1.74
1.117	1.06	7.183	1.74	13.250	7.14	19.32	1.74
1.133	1.06	7.200	1.74	13.267	5.22	19.33	1.74
1.150	1.06	7.217	1.74	13.283	5.21	19.35	1.74
1.167	1.06	7.233	1.74	13.300	5.21	19.37	1.74
1.183	1.06	7.250	1.74	13.317	5.21	19.38	1.74
1.200	1.06	7.267	2.12	13.333	5.21	19.40	1.74
1.217	1.06	7.283	2.12	13.350	5.21	19.42	1.74
1.233	1.06	7.300	2.12	13.367	5.21	19.43	1.74
1.250	1.06	7.317	2.12	13.383	5.21	19.45	1.74
1.267	1.06	7.333	2.12	13.400	5.21	19.47	1.74
1.283	1.06	7.350	2.12	13.417	5.21	19.48	1.74
1.300	1.06	7.367	2.12	13.433	5.21	19.50	1.74
1.317	1.06	7.383	2.12	13.450	5.21	19.52	1.74
1.333	1.06	7.400	2.12	13.467	5.21	19.53	1.74
1.350	1.06	7.417	2.12	13.483	5.21	19.55	1.74
1.367	1.06	7.433	2.12	13.500	5.21	19.57	1.74
1.383	1.06	7.450	2.12	13.517	5.21	19.58	1.74
1.400	1.06	7.467	2.12	13.533	5.21	19.60	1.74
1.417	1.06	7.483	2.12	13.550	5.21	19.62	1.74
1.433	1.06	7.500	2.12	13.567	5.21	19.63	1.74
1.450	1.06	7.517	2.12	13.583	5.21	19.65	1.74
1.467	1.06	7.533	2.12	13.600	5.21	19.67	1.74
1.483	1.06	7.550	2.12	13.617	5.21	19.68	1.74
1.500	1.06	7.567	2.12	13.633	5.21	19.70	1.74
1.517	1.06	7.583	2.12	13.650	5.21	19.72	1.74
1.533	1.06	7.600	2.12	13.667	5.21	19.73	1.74
1.550	1.06	7.617	2.12	13.683	5.21	19.75	1.74
1.567	1.06	7.633	2.12	13.700	5.21	19.77	1.74
1.583	1.06	7.650	2.12	13.717	5.21	19.78	1.74
1.600	1.06	7.667	2.12	13.733	5.21	19.80	1.74
1.617	1.06	7.683	2.12	13.750	5.21	19.82	1.74
1.633	1.06	7.700	2.12	13.767	4.06	19.83	1.74
1.650	1.06	7.717	2.12	13.783	4.05	19.85	1.74
1.667	1.06	7.733	2.12	13.800	4.05	19.87	1.74
1.683	1.06	7.750	2.12	13.817	4.05	19.88	1.74
1.700	1.06	7.767	2.12	13.833	4.05	19.90	1.74
1.717	1.06	7.783	2.12	13.850	4.05	19.92	1.74
1.733	1.06	7.800	2.12	13.867	4.05	19.93	1.74
1.750	1.06	7.817	2.12	13.883	4.05	19.95	1.74
1.767	1.06	7.833	2.12	13.900	4.05	19.97	1.74
1.783	1.06	7.850	2.12	13.917	4.05	19.98	1.74
1.800	1.06	7.867	2.12	13.933	4.05	20.00	1.74
1.817	1.06	7.883	2.12	13.950	4.05	20.02	1.74
1.833	1.06	7.900	2.12	13.967	4.05	20.03	1.74
1.850	1.06	7.917	2.12	13.983	4.05	20.05	1.74
1.867	1.06	7.933	2.12	14.000	4.05	20.07	1.74
1.883	1.06	7.950	2.12	14.017	4.05	20.08	1.74
1.900	1.06	7.967	2.12	14.033	4.05	20.10	1.74
1.917	1.06	7.983	2.12	14.050	4.05	20.12	1.74
1.933	1.06	8.000	2.12	14.067	4.05	20.13	1.74
1.950	1.06	8.017	2.12	14.083	4.05	20.15	1.74
1.967	1.06	8.033	2.12	14.100	4.05	20.17	1.74
1.983	1.06	8.050	2.12	14.117	4.05	20.18	1.74
2.000	1.06	8.067	2.12	14.133	4.05	20.20	1.74
2.017	1.06	8.083	2.12	14.150	4.05	20.22	1.74
2.033	1.06	8.100	2.12	14.167	4.05	20.23	1.74
2.050	1.06	8.117	2.12	14.183	4.05	20.25	1.74
2.067	1.06	8.133	2.12	14.200	4.05	20.27	1.16
2.083	1.06	8.150	2.12	14.217	4.05	20.28	1.16
2.100	1.06	8.167	2.12	14.233	4.05	20.30	1.16
2.117	1.06	8.183	2.12	14.250	4.05	20.32	1.16
2.133	1.06	8.200	2.12	14.267	2.90	20.33	1.16
2.150	1.06	8.217	2.12	14.283	2.90	20.35	1.16
2.167	1.06	8.233	2.12	14.300	2.90	20.37	1.16
2.183	1.06	8.250	2.12	14.317	2.90	20.38	1.16
2.200	1.06	8.267	2.51	14.333	2.90	20.40	1.16
2.217	1.06	8.283	2.51	14.350	2.90	20.42	1.16
2.233	1.06	8.300	2.51	14.367	2.90	20.43	1.16

2.250	1.06	8.317	2.51	14.383	2.90	20.45	1.16
2.267	1.25	8.333	2.51	14.400	2.90	20.47	1.16
2.283	1.25	8.350	2.51	14.417	2.90	20.48	1.16
2.300	1.25	8.367	2.51	14.433	2.90	20.50	1.16
2.317	1.25	8.383	2.51	14.450	2.90	20.52	1.16
2.333	1.25	8.400	2.51	14.467	2.90	20.53	1.16
2.350	1.25	8.417	2.51	14.483	2.90	20.55	1.16
2.367	1.25	8.433	2.51	14.500	2.90	20.57	1.16
2.383	1.25	8.450	2.51	14.517	2.90	20.58	1.16
2.400	1.25	8.467	2.51	14.533	2.90	20.60	1.16
2.417	1.25	8.483	2.51	14.550	2.90	20.62	1.16
2.433	1.25	8.500	2.51	14.567	2.90	20.63	1.16
2.450	1.25	8.517	2.51	14.583	2.90	20.65	1.16
2.467	1.25	8.533	2.51	14.600	2.90	20.67	1.16
2.483	1.25	8.550	2.51	14.617	2.90	20.68	1.16
2.500	1.25	8.567	2.51	14.633	2.90	20.70	1.16
2.517	1.25	8.583	2.51	14.650	2.90	20.72	1.16
2.533	1.25	8.600	2.51	14.667	2.90	20.73	1.16
2.550	1.25	8.617	2.51	14.683	2.90	20.75	1.16
2.567	1.25	8.633	2.51	14.700	2.90	20.77	1.16
2.583	1.25	8.650	2.51	14.717	2.90	20.78	1.16
2.600	1.25	8.667	2.51	14.733	2.90	20.80	1.16
2.617	1.25	8.683	2.51	14.750	2.90	20.82	1.16
2.633	1.25	8.700	2.51	14.767	2.90	20.83	1.16
2.650	1.25	8.717	2.51	14.783	2.90	20.85	1.16
2.667	1.25	8.733	2.51	14.800	2.90	20.87	1.16
2.683	1.25	8.750	2.51	14.817	2.90	20.88	1.16
2.700	1.25	8.767	2.70	14.833	2.90	20.90	1.16
2.717	1.25	8.783	2.70	14.850	2.90	20.92	1.16
2.733	1.25	8.800	2.70	14.867	2.90	20.93	1.16
2.750	1.25	8.817	2.70	14.883	2.90	20.95	1.16
2.767	1.25	8.833	2.70	14.900	2.90	20.97	1.16
2.783	1.25	8.850	2.70	14.917	2.90	20.98	1.16
2.800	1.25	8.867	2.70	14.933	2.90	21.00	1.16
2.817	1.25	8.883	2.70	14.950	2.90	21.02	1.16
2.833	1.25	8.900	2.70	14.967	2.90	21.03	1.16
2.850	1.25	8.917	2.70	14.983	2.90	21.05	1.16
2.867	1.25	8.933	2.70	15.000	2.90	21.07	1.16
2.883	1.25	8.950	2.70	15.017	2.90	21.08	1.16
2.900	1.25	8.967	2.70	15.033	2.90	21.10	1.16
2.917	1.25	8.983	2.70	15.050	2.90	21.12	1.16
2.933	1.25	9.000	2.70	15.067	2.90	21.13	1.16
2.950	1.25	9.017	2.70	15.083	2.90	21.15	1.16
2.967	1.25	9.033	2.70	15.100	2.90	21.17	1.16
2.983	1.25	9.050	2.70	15.117	2.90	21.18	1.16
3.000	1.25	9.067	2.70	15.133	2.90	21.20	1.16
3.017	1.25	9.083	2.70	15.150	2.90	21.22	1.16
3.033	1.25	9.100	2.70	15.167	2.90	21.23	1.16
3.050	1.25	9.117	2.70	15.183	2.90	21.25	1.16
3.067	1.25	9.133	2.70	15.200	2.90	21.27	1.16
3.083	1.25	9.150	2.70	15.217	2.90	21.28	1.16
3.100	1.25	9.167	2.70	15.233	2.90	21.30	1.16
3.117	1.25	9.183	2.70	15.250	2.90	21.32	1.16
3.133	1.25	9.200	2.70	15.267	2.90	21.33	1.16
3.150	1.25	9.217	2.70	15.283	2.90	21.35	1.16
3.167	1.25	9.233	2.70	15.300	2.90	21.37	1.16
3.183	1.25	9.250	2.70	15.317	2.90	21.38	1.16
3.200	1.25	9.267	3.09	15.333	2.90	21.40	1.16
3.217	1.25	9.283	3.09	15.350	2.90	21.42	1.16
3.233	1.25	9.300	3.09	15.367	2.90	21.43	1.16
3.250	1.25	9.317	3.09	15.383	2.90	21.45	1.16
3.267	1.25	9.333	3.09	15.400	2.90	21.47	1.16
3.283	1.25	9.350	3.09	15.417	2.90	21.48	1.16
3.300	1.25	9.367	3.09	15.433	2.90	21.50	1.16
3.317	1.25	9.383	3.09	15.450	2.90	21.52	1.16
3.333	1.25	9.400	3.09	15.467	2.90	21.53	1.16
3.350	1.25	9.417	3.09	15.483	2.90	21.55	1.16
3.367	1.25	9.433	3.09	15.500	2.90	21.57	1.16
3.383	1.25	9.450	3.09	15.517	2.90	21.58	1.16
3.400	1.25	9.467	3.09	15.533	2.90	21.60	1.16
3.417	1.25	9.483	3.09	15.550	2.90	21.62	1.16
3.433	1.25	9.500	3.09	15.567	2.90	21.63	1.16
3.450	1.25	9.517	3.09	15.583	2.90	21.65	1.16
3.467	1.25	9.533	3.09	15.600	2.90	21.67	1.16
3.483	1.25	9.550	3.09	15.617	2.90	21.68	1.16
3.500	1.25	9.567	3.09	15.633	2.90	21.70	1.16
3.517	1.25	9.583	3.09	15.650	2.90	21.72	1.16
3.533	1.25	9.600	3.09	15.667	2.90	21.73	1.16
3.550	1.25	9.617	3.09	15.683	2.90	21.75	1.16
3.567	1.25	9.633	3.09	15.700	2.90	21.77	1.16
3.583	1.25	9.650	3.09	15.717	2.90	21.78	1.16
3.600	1.25	9.667	3.09	15.733	2.90	21.80	1.16
3.617	1.25	9.683	3.09	15.750	2.90	21.82	1.16
3.633	1.25	9.700	3.09	15.767	2.90	21.83	1.16
3.650	1.25	9.717	3.09	15.783	2.90	21.85	1.16
3.667	1.25	9.733	3.09	15.800	2.90	21.87	1.16
3.683	1.25	9.750	3.09	15.817	2.90	21.88	1.16
3.700	1.25	9.767	3.48	15.833	2.90	21.90	1.16
3.717	1.25	9.783	3.48	15.850	2.90	21.92	1.16
3.733	1.25	9.800	3.48	15.867	2.90	21.93	1.16
3.750	1.25	9.817	3.48	15.883	2.90	21.95	1.16
3.767	1.25	9.833	3.48	15.900	2.90	21.97	1.16
3.783	1.25	9.850	3.48	15.917	2.90	21.98	1.16
3.800	1.25	9.867	3.48	15.933	2.90	22.00	1.16
3.817	1.25	9.883	3.48	15.950	2.90	22.02	1.16
3.833	1.25	9.900	3.48	15.967	2.90	22.03	1.16
3.850	1.25	9.917	3.48	15.983	2.90	22.05	1.16
3.867	1.25	9.933	3.48	16.000	2.90	22.07	1.16
3.883	1.25	9.950	3.48	16.017	2.90	22.08	1.16
3.900	1.25	9.967	3.48	16.033	2.90	22.10	1.16

3.917	1.25	9.983	3.48	16.050	2.90	22.12	1.16
3.933	1.25	10.000	3.48	16.067	2.90	22.13	1.16
3.950	1.25	10.017	3.48	16.083	2.90	22.15	1.16
3.967	1.25	10.033	3.48	16.100	2.90	22.17	1.16
3.983	1.25	10.050	3.48	16.117	2.90	22.18	1.16
4.000	1.25	10.067	3.48	16.133	2.90	22.20	1.16
4.017	1.25	10.083	3.48	16.150	2.90	22.22	1.16
4.033	1.25	10.100	3.48	16.167	2.90	22.23	1.16
4.050	1.25	10.117	3.48	16.183	2.90	22.25	1.16
4.067	1.25	10.133	3.48	16.200	2.90	22.27	1.16
4.083	1.25	10.150	3.48	16.217	2.90	22.28	1.16
4.100	1.25	10.167	3.48	16.233	2.90	22.30	1.16
4.117	1.25	10.183	3.48	16.250	2.90	22.32	1.16
4.133	1.25	10.200	3.48	16.267	1.74	22.33	1.16
4.150	1.25	10.217	3.48	16.283	1.74	22.35	1.16
4.167	1.25	10.233	3.48	16.300	1.74	22.37	1.16
4.183	1.25	10.250	3.48	16.317	1.74	22.38	1.16
4.200	1.25	10.267	4.44	16.333	1.74	22.40	1.16
4.217	1.25	10.283	4.44	16.350	1.74	22.42	1.16
4.233	1.25	10.300	4.44	16.367	1.74	22.43	1.16
4.250	1.25	10.317	4.44	16.383	1.74	22.45	1.16
4.267	1.54	10.333	4.44	16.400	1.74	22.47	1.16
4.283	1.54	10.350	4.44	16.417	1.74	22.48	1.16
4.300	1.54	10.367	4.44	16.433	1.74	22.50	1.16
4.317	1.54	10.383	4.44	16.450	1.74	22.52	1.16
4.333	1.54	10.400	4.44	16.467	1.74	22.53	1.16
4.350	1.54	10.417	4.44	16.483	1.74	22.55	1.16
4.367	1.54	10.433	4.44	16.500	1.74	22.57	1.16
4.383	1.54	10.450	4.44	16.517	1.74	22.58	1.16
4.400	1.54	10.467	4.44	16.533	1.74	22.60	1.16
4.417	1.54	10.483	4.44	16.550	1.74	22.62	1.16
4.433	1.54	10.500	4.44	16.567	1.74	22.63	1.16
4.450	1.54	10.517	4.44	16.583	1.74	22.65	1.16
4.467	1.54	10.533	4.44	16.600	1.74	22.67	1.16
4.483	1.54	10.550	4.44	16.617	1.74	22.68	1.16
4.500	1.54	10.567	4.44	16.633	1.74	22.70	1.16
4.517	1.54	10.583	4.44	16.650	1.74	22.72	1.16
4.533	1.54	10.600	4.44	16.667	1.74	22.73	1.16
4.550	1.54	10.617	4.44	16.683	1.74	22.75	1.16
4.567	1.54	10.633	4.44	16.700	1.74	22.77	1.16
4.583	1.54	10.650	4.44	16.717	1.74	22.78	1.16
4.600	1.54	10.667	4.44	16.733	1.74	22.80	1.16
4.617	1.54	10.683	4.44	16.750	1.74	22.82	1.16
4.633	1.54	10.700	4.44	16.767	1.74	22.83	1.16
4.650	1.54	10.717	4.44	16.783	1.74	22.85	1.16
4.667	1.54	10.733	4.44	16.800	1.74	22.87	1.16
4.683	1.54	10.750	4.44	16.817	1.74	22.88	1.16
4.700	1.54	10.767	5.98	16.833	1.74	22.90	1.16
4.717	1.54	10.783	5.98	16.850	1.74	22.92	1.16
4.733	1.54	10.800	5.98	16.867	1.74	22.93	1.16
4.750	1.54	10.817	5.98	16.883	1.74	22.95	1.16
4.767	1.54	10.833	5.98	16.900	1.74	22.97	1.16
4.783	1.54	10.850	5.98	16.917	1.74	22.98	1.16
4.800	1.54	10.867	5.98	16.933	1.74	23.00	1.16
4.817	1.54	10.883	5.98	16.950	1.74	23.02	1.16
4.833	1.54	10.900	5.98	16.967	1.74	23.03	1.16
4.850	1.54	10.917	5.98	16.983	1.74	23.05	1.16
4.867	1.54	10.933	5.98	17.000	1.74	23.07	1.16
4.883	1.54	10.950	5.98	17.017	1.74	23.08	1.16
4.900	1.54	10.967	5.98	17.033	1.74	23.10	1.16
4.917	1.54	10.983	5.98	17.050	1.74	23.12	1.16
4.933	1.54	11.000	5.98	17.067	1.74	23.13	1.16
4.950	1.54	11.017	5.98	17.083	1.74	23.15	1.16
4.967	1.54	11.033	5.98	17.100	1.74	23.17	1.16
4.983	1.54	11.050	5.98	17.117	1.74	23.18	1.16
5.000	1.54	11.067	5.98	17.133	1.74	23.20	1.16
5.017	1.54	11.083	5.98	17.150	1.74	23.22	1.16
5.033	1.54	11.100	5.98	17.167	1.74	23.23	1.16
5.050	1.54	11.117	5.98	17.183	1.74	23.25	1.16
5.067	1.54	11.133	5.98	17.200	1.74	23.27	1.16
5.083	1.54	11.150	5.98	17.217	1.74	23.28	1.16
5.100	1.54	11.167	5.98	17.233	1.74	23.30	1.16
5.117	1.54	11.183	5.98	17.250	1.74	23.32	1.16
5.133	1.54	11.200	5.98	17.267	1.74	23.33	1.16
5.150	1.54	11.217	5.98	17.283	1.74	23.35	1.16
5.167	1.54	11.233	5.98	17.300	1.74	23.37	1.16
5.183	1.54	11.250	5.98	17.317	1.74	23.38	1.16
5.200	1.54	11.267	9.27	17.333	1.74	23.40	1.16
5.217	1.54	11.283	9.27	17.350	1.74	23.42	1.16
5.233	1.54	11.300	9.27	17.367	1.74	23.43	1.16
5.250	1.54	11.317	9.27	17.383	1.74	23.45	1.16
5.267	1.54	11.333	9.27	17.400	1.74	23.47	1.16
5.283	1.54	11.350	9.27	17.417	1.74	23.48	1.16
5.300	1.54	11.367	9.27	17.433	1.74	23.50	1.16
5.317	1.54	11.383	9.27	17.450	1.74	23.52	1.16
5.333	1.54	11.400	9.27	17.467	1.74	23.53	1.16
5.350	1.54	11.417	9.27	17.483	1.74	23.55	1.16
5.367	1.54	11.433	9.27	17.500	1.74	23.57	1.16
5.383	1.54	11.450	9.27	17.517	1.74	23.58	1.16
5.400	1.54	11.467	9.27	17.533	1.74	23.60	1.16
5.417	1.54	11.483	9.27	17.550	1.74	23.62	1.16
5.433	1.54	11.500	9.27	17.567	1.74	23.63	1.16
5.450	1.54	11.517	9.27	17.583	1.74	23.65	1.16
5.467	1.54	11.533	9.27	17.600	1.74	23.67	1.16
5.483	1.54	11.550	9.27	17.617	1.74	23.68	1.16
5.500	1.54	11.567	9.27	17.633	1.74	23.70	1.16
5.517	1.54	11.583	9.27	17.650	1.74	23.72	1.16
5.533	1.54	11.600	9.27	17.667	1.74	23.73	1.16
5.550	1.54	11.617	9.27	17.683	1.74	23.75	1.16
5.567	1.54	11.633	9.27	17.700	1.74	23.77	1.16

5.583	1.54	11.650	9.27	17.717	1.74	23.78	1.16
5.600	1.54	11.667	9.27	17.733	1.74	23.80	1.16
5.617	1.54	11.683	9.27	17.750	1.74	23.82	1.16
5.633	1.54	11.700	9.27	17.767	1.74	23.83	1.16
5.650	1.54	11.717	9.27	17.783	1.74	23.85	1.16
5.667	1.54	11.733	9.27	17.800	1.74	23.87	1.16
5.683	1.54	11.750	9.27	17.817	1.74	23.88	1.16
5.700	1.54	11.767	28.56	17.833	1.74	23.90	1.16
5.717	1.54	11.783	28.57	17.850	1.74	23.92	1.16
5.733	1.54	11.800	28.57	17.867	1.74	23.93	1.16
5.750	1.54	11.817	28.57	17.883	1.74	23.95	1.16
5.767	1.54	11.833	28.57	17.900	1.74	23.97	1.16
5.783	1.54	11.850	28.57	17.917	1.74	23.98	1.16
5.800	1.54	11.867	28.57	17.933	1.74	24.00	1.16
5.817	1.54	11.883	28.57	17.950	1.74	24.02	1.16
5.833	1.54	11.900	28.57	17.967	1.74	24.03	1.16
5.850	1.54	11.917	28.57	17.983	1.74	24.05	1.16
5.867	1.54	11.933	28.57	18.000	1.74	24.07	1.16
5.883	1.54	11.950	28.57	18.017	1.74	24.08	1.16
5.900	1.54	11.967	28.57	18.033	1.74	24.10	1.16
5.917	1.54	11.983	28.57	18.050	1.74	24.12	1.16
5.933	1.54	12.000	28.57	18.067	1.74	24.13	1.16
5.950	1.54	12.017	118.09	18.083	1.74	24.15	1.16
5.967	1.54	12.033	118.15	18.100	1.74	24.17	1.16
5.983	1.54	12.050	118.15	18.117	1.74	24.18	1.16
6.000	1.54	12.067	118.15	18.133	1.74	24.20	1.16
6.017	1.54	12.083	118.15	18.150	1.74	24.22	1.16
6.033	1.54	12.100	118.15	18.167	1.74	24.23	1.16
6.050	1.54	12.117	118.15	18.183	1.74	24.25	1.16
6.067	1.54	12.133	118.15	18.200	1.74		

Max.Eff.Inten.(mm/hr)=	118.15	32.00	
over (min)	5.00	2.00	
Storage Coeff. (min)=	0.83 (ii)	1.96 (ii)	
Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.50	0.57	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.028 (iii)
TIME TO PEAK (hrs)=	12.23	12.25	12.25
RUNOFF VOLUME (mm)=	94.53	22.17	90.91
TOTAL RAINFALL (mm)=	96.53	96.53	96.53
RUNOFF COEFFICIENT =	0.98	0.23	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:12- 100yr-24hr-SCS **
****

CALIB	
STANDHYD (0001)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 95.00 Dir. Conn.(%)= 95.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.71	12.150	130.65	18.22	1.92
0.033	0.00	6.100	1.71	12.167	130.65	18.23	1.92
0.050	0.00	6.117	1.71	12.183	130.65	18.25	1.92
0.067	0.00	6.133	1.71	12.200	130.65	18.27	1.92
0.083	0.00	6.150	1.71	12.217	130.65	18.28	1.92
0.100	0.00	6.167	1.71	12.233	130.65	18.30	1.92
0.117	0.00	6.183	1.71	12.250	130.65	18.32	1.92
0.133	0.00	6.200	1.71	12.267	15.48	18.33	1.92
0.150	0.00	6.217	1.71	12.283	15.37	18.35	1.92
0.167	0.00	6.233	1.71	12.300	15.37	18.37	1.92
0.183	0.00	6.250	1.71	12.317	15.37	18.38	1.92
0.200	0.00	6.267	1.92	12.333	15.37	18.40	1.92
0.217	0.00	6.283	1.92	12.350	15.37	18.42	1.92
0.233	0.00	6.300	1.92	12.367	15.37	18.43	1.92
0.250	0.00	6.317	1.92	12.383	15.37	18.45	1.92
0.267	1.17	6.333	1.92	12.400	15.37	18.47	1.92
0.283	1.17	6.350	1.92	12.417	15.37	18.48	1.92
0.300	1.17	6.367	1.92	12.433	15.37	18.50	1.92
0.317	1.17	6.383	1.92	12.450	15.37	18.52	1.92
0.333	1.17	6.400	1.92	12.467	15.37	18.53	1.92
0.350	1.17	6.417	1.92	12.483	15.37	18.55	1.92
0.367	1.17	6.433	1.92	12.500	15.37	18.57	1.92
0.383	1.17	6.450	1.92	12.517	15.37	18.58	1.92
0.400	1.17	6.467	1.92	12.533	15.37	18.60	1.92
0.417	1.17	6.483	1.92	12.550	15.37	18.62	1.92
0.433	1.17	6.500	1.92	12.567	15.37	18.63	1.92
0.450	1.17	6.517	1.92	12.583	15.37	18.65	1.92

0.467	1.17	6.533	1.92	12.600	15.37	18.67	1.92
0.483	1.17	6.550	1.92	12.617	15.37	18.68	1.92
0.500	1.17	6.567	1.92	12.633	15.37	18.70	1.92
0.517	1.17	6.583	1.92	12.650	15.37	18.72	1.92
0.533	1.17	6.600	1.92	12.667	15.37	18.73	1.92
0.550	1.17	6.617	1.92	12.683	15.37	18.75	1.92
0.567	1.17	6.633	1.92	12.700	15.37	18.77	1.92
0.583	1.17	6.650	1.92	12.717	15.37	18.78	1.92
0.600	1.17	6.667	1.92	12.733	15.37	18.80	1.92
0.617	1.17	6.683	1.92	12.750	15.37	18.82	1.92
0.633	1.17	6.700	1.92	12.767	7.91	18.83	1.92
0.650	1.17	6.717	1.92	12.783	7.90	18.85	1.92
0.667	1.17	6.733	1.92	12.800	7.90	18.87	1.92
0.683	1.17	6.750	1.92	12.817	7.90	18.88	1.92
0.700	1.17	6.767	1.92	12.833	7.90	18.90	1.92
0.717	1.17	6.783	1.92	12.850	7.90	18.92	1.92
0.733	1.17	6.800	1.92	12.867	7.90	18.93	1.92
0.750	1.17	6.817	1.92	12.883	7.90	18.95	1.92
0.767	1.17	6.833	1.92	12.900	7.90	18.97	1.92
0.783	1.17	6.850	1.92	12.917	7.90	18.98	1.92
0.800	1.17	6.867	1.92	12.933	7.90	19.00	1.92
0.817	1.17	6.883	1.92	12.950	7.90	19.02	1.92
0.833	1.17	6.900	1.92	12.967	7.90	19.03	1.92
0.850	1.17	6.917	1.92	12.983	7.90	19.05	1.92
0.867	1.17	6.933	1.92	13.000	7.90	19.07	1.92
0.883	1.17	6.950	1.92	13.017	7.90	19.08	1.92
0.900	1.17	6.967	1.92	13.033	7.90	19.10	1.92
0.917	1.17	6.983	1.92	13.050	7.90	19.12	1.92
0.933	1.17	7.000	1.92	13.067	7.90	19.13	1.92
0.950	1.17	7.017	1.92	13.083	7.90	19.15	1.92
0.967	1.17	7.033	1.92	13.100	7.90	19.17	1.92
0.983	1.17	7.050	1.92	13.117	7.90	19.18	1.92
1.000	1.17	7.067	1.92	13.133	7.90	19.20	1.92
1.017	1.17	7.083	1.92	13.150	7.90	19.22	1.92
1.033	1.17	7.100	1.92	13.167	7.90	19.23	1.92
1.050	1.17	7.117	1.92	13.183	7.90	19.25	1.92
1.067	1.17	7.133	1.92	13.200	7.90	19.27	1.92
1.083	1.17	7.150	1.92	13.217	7.90	19.28	1.92
1.100	1.17	7.167	1.92	13.233	7.90	19.30	1.92
1.117	1.17	7.183	1.92	13.250	7.90	19.32	1.92
1.133	1.17	7.200	1.92	13.267	5.77	19.33	1.92
1.150	1.17	7.217	1.92	13.283	5.76	19.35	1.92
1.167	1.17	7.233	1.92	13.300	5.76	19.37	1.92
1.183	1.17	7.250	1.92	13.317	5.76	19.38	1.92
1.200	1.17	7.267	2.35	13.333	5.76	19.40	1.92
1.217	1.17	7.283	2.35	13.350	5.76	19.42	1.92
1.233	1.17	7.300	2.35	13.367	5.76	19.43	1.92
1.250	1.17	7.317	2.35	13.383	5.76	19.45	1.92
1.267	1.17	7.333	2.35	13.400	5.76	19.47	1.92
1.283	1.17	7.350	2.35	13.417	5.76	19.48	1.92
1.300	1.17	7.367	2.35	13.433	5.76	19.50	1.92
1.317	1.17	7.383	2.35	13.450	5.76	19.52	1.92
1.333	1.17	7.400	2.35	13.467	5.76	19.53	1.92
1.350	1.17	7.417	2.35	13.483	5.76	19.55	1.92
1.367	1.17	7.433	2.35	13.500	5.76	19.57	1.92
1.383	1.17	7.450	2.35	13.517	5.76	19.58	1.92
1.400	1.17	7.467	2.35	13.533	5.76	19.60	1.92
1.417	1.17	7.483	2.35	13.550	5.76	19.62	1.92
1.433	1.17	7.500	2.35	13.567	5.76	19.63	1.92
1.450	1.17	7.517	2.35	13.583	5.76	19.65	1.92
1.467	1.17	7.533	2.35	13.600	5.76	19.67	1.92
1.483	1.17	7.550	2.35	13.617	5.76	19.68	1.92
1.500	1.17	7.567	2.35	13.633	5.76	19.70	1.92
1.517	1.17	7.583	2.35	13.650	5.76	19.72	1.92
1.533	1.17	7.600	2.35	13.667	5.76	19.73	1.92
1.550	1.17	7.617	2.35	13.683	5.76	19.75	1.92
1.567	1.17	7.633	2.35	13.700	5.76	19.77	1.92
1.583	1.17	7.650	2.35	13.717	5.76	19.78	1.92
1.600	1.17	7.667	2.35	13.733	5.76	19.80	1.92
1.617	1.17	7.683	2.35	13.750	5.76	19.82	1.92
1.633	1.17	7.700	2.35	13.767	4.49	19.83	1.92
1.650	1.17	7.717	2.35	13.783	4.48	19.85	1.92
1.667	1.17	7.733	2.35	13.800	4.48	19.87	1.92
1.683	1.17	7.750	2.35	13.817	4.48	19.88	1.92
1.700	1.17	7.767	2.35	13.833	4.48	19.90	1.92
1.717	1.17	7.783	2.35	13.850	4.48	19.92	1.92
1.733	1.17	7.800	2.35	13.867	4.48	19.93	1.92
1.750	1.17	7.817	2.35	13.883	4.48	19.95	1.92
1.767	1.17	7.833	2.35	13.900	4.48	19.97	1.92
1.783	1.17	7.850	2.35	13.917	4.48	19.98	1.92
1.800	1.17	7.867	2.35	13.933	4.48	20.00	1.92
1.817	1.17	7.883	2.35	13.950	4.48	20.02	1.92
1.833	1.17	7.900	2.35	13.967	4.48	20.03	1.92
1.850	1.17	7.917	2.35	13.983	4.48	20.05	1.92
1.867	1.17	7.933	2.35	14.000	4.48	20.07	1.92
1.883	1.17	7.950	2.35	14.017	4.48	20.08	1.92
1.900	1.17	7.967	2.35	14.033	4.48	20.10	1.92
1.917	1.17	7.983	2.35	14.050	4.48	20.12	1.92
1.933	1.17	8.000	2.35	14.067	4.48	20.13	1.92
1.950	1.17	8.017	2.35	14.083	4.48	20.15	1.92
1.967	1.17	8.033	2.35	14.100	4.48	20.17	1.92
1.983	1.17	8.050	2.35	14.117	4.48	20.18	1.92
2.000	1.17	8.067	2.35	14.133	4.48	20.20	1.92
2.017	1.17	8.083	2.35	14.150	4.48	20.22	1.92
2.033	1.17	8.100	2.35	14.167	4.48	20.23	1.92
2.050	1.17	8.117	2.35	14.183	4.48	20.25	1.92
2.067	1.17	8.133	2.35	14.200	4.48	20.27	1.29
2.083	1.17	8.150	2.35	14.217	4.48	20.28	1.28
2.100	1.17	8.167	2.35	14.233	4.48	20.30	1.28
2.117	1.17	8.183	2.35	14.250	4.48	20.32	1.28

2.133	1.17	8.200	2.35	14.267	3.21	20.33	1.28
2.150	1.17	8.217	2.35	14.283	3.20	20.35	1.28
2.167	1.17	8.233	2.35	14.300	3.20	20.37	1.28
2.183	1.17	8.250	2.35	14.317	3.20	20.38	1.28
2.200	1.17	8.267	2.78	14.333	3.20	20.40	1.28
2.217	1.17	8.283	2.78	14.350	3.20	20.42	1.28
2.233	1.17	8.300	2.78	14.367	3.20	20.43	1.28
2.250	1.17	8.317	2.78	14.383	3.20	20.45	1.28
2.267	1.39	8.333	2.78	14.400	3.20	20.47	1.28
2.283	1.39	8.350	2.78	14.417	3.20	20.48	1.28
2.300	1.39	8.367	2.78	14.433	3.20	20.50	1.28
2.317	1.39	8.383	2.78	14.450	3.20	20.52	1.28
2.333	1.39	8.400	2.78	14.467	3.20	20.53	1.28
2.350	1.39	8.417	2.78	14.483	3.20	20.55	1.28
2.367	1.39	8.433	2.78	14.500	3.20	20.57	1.28
2.383	1.39	8.450	2.78	14.517	3.20	20.58	1.28
2.400	1.39	8.467	2.78	14.533	3.20	20.60	1.28
2.417	1.39	8.483	2.78	14.550	3.20	20.62	1.28
2.433	1.39	8.500	2.78	14.567	3.20	20.63	1.28
2.450	1.39	8.517	2.78	14.583	3.20	20.65	1.28
2.467	1.39	8.533	2.78	14.600	3.20	20.67	1.28
2.483	1.39	8.550	2.78	14.617	3.20	20.68	1.28
2.500	1.39	8.567	2.78	14.633	3.20	20.70	1.28
2.517	1.39	8.583	2.78	14.650	3.20	20.72	1.28
2.533	1.39	8.600	2.78	14.667	3.20	20.73	1.28
2.550	1.39	8.617	2.78	14.683	3.20	20.75	1.28
2.567	1.39	8.633	2.78	14.700	3.20	20.77	1.28
2.583	1.39	8.650	2.78	14.717	3.20	20.78	1.28
2.600	1.39	8.667	2.78	14.733	3.20	20.80	1.28
2.617	1.39	8.683	2.78	14.750	3.20	20.82	1.28
2.633	1.39	8.700	2.78	14.767	3.20	20.83	1.28
2.650	1.39	8.717	2.78	14.783	3.20	20.85	1.28
2.667	1.39	8.733	2.78	14.800	3.20	20.87	1.28
2.683	1.39	8.750	2.78	14.817	3.20	20.88	1.28
2.700	1.39	8.767	2.99	14.833	3.20	20.90	1.28
2.717	1.39	8.783	2.99	14.850	3.20	20.92	1.28
2.733	1.39	8.800	2.99	14.867	3.20	20.93	1.28
2.750	1.39	8.817	2.99	14.883	3.20	20.95	1.28
2.767	1.39	8.833	2.99	14.900	3.20	20.97	1.28
2.783	1.39	8.850	2.99	14.917	3.20	20.98	1.28
2.800	1.39	8.867	2.99	14.933	3.20	21.00	1.28
2.817	1.39	8.883	2.99	14.950	3.20	21.02	1.28
2.833	1.39	8.900	2.99	14.967	3.20	21.03	1.28
2.850	1.39	8.917	2.99	14.983	3.20	21.05	1.28
2.867	1.39	8.933	2.99	15.000	3.20	21.07	1.28
2.883	1.39	8.950	2.99	15.017	3.20	21.08	1.28
2.900	1.39	8.967	2.99	15.033	3.20	21.10	1.28
2.917	1.39	8.983	2.99	15.050	3.20	21.12	1.28
2.933	1.39	9.000	2.99	15.067	3.20	21.13	1.28
2.950	1.39	9.017	2.99	15.083	3.20	21.15	1.28
2.967	1.39	9.033	2.99	15.100	3.20	21.17	1.28
2.983	1.39	9.050	2.99	15.117	3.20	21.18	1.28
3.000	1.39	9.067	2.99	15.133	3.20	21.20	1.28
3.017	1.39	9.083	2.99	15.150	3.20	21.22	1.28
3.033	1.39	9.100	2.99	15.167	3.20	21.23	1.28
3.050	1.39	9.117	2.99	15.183	3.20	21.25	1.28
3.067	1.39	9.133	2.99	15.200	3.20	21.27	1.28
3.083	1.39	9.150	2.99	15.217	3.20	21.28	1.28
3.100	1.39	9.167	2.99	15.233	3.20	21.30	1.28
3.117	1.39	9.183	2.99	15.250	3.20	21.32	1.28
3.133	1.39	9.200	2.99	15.267	3.20	21.33	1.28
3.150	1.39	9.217	2.99	15.283	3.20	21.35	1.28
3.167	1.39	9.233	2.99	15.300	3.20	21.37	1.28
3.183	1.39	9.250	2.99	15.317	3.20	21.38	1.28
3.200	1.39	9.267	3.42	15.333	3.20	21.40	1.28
3.217	1.39	9.283	3.42	15.350	3.20	21.42	1.28
3.233	1.39	9.300	3.42	15.367	3.20	21.43	1.28
3.250	1.39	9.317	3.42	15.383	3.20	21.45	1.28
3.267	1.39	9.333	3.42	15.400	3.20	21.47	1.28
3.283	1.39	9.350	3.42	15.417	3.20	21.48	1.28
3.300	1.39	9.367	3.42	15.433	3.20	21.50	1.28
3.317	1.39	9.383	3.42	15.450	3.20	21.52	1.28
3.333	1.39	9.400	3.42	15.467	3.20	21.53	1.28
3.350	1.39	9.417	3.42	15.483	3.20	21.55	1.28
3.367	1.39	9.433	3.42	15.500	3.20	21.57	1.28
3.383	1.39	9.450	3.42	15.517	3.20	21.58	1.28
3.400	1.39	9.467	3.42	15.533	3.20	21.60	1.28
3.417	1.39	9.483	3.42	15.550	3.20	21.62	1.28
3.433	1.39	9.500	3.42	15.567	3.20	21.63	1.28
3.450	1.39	9.517	3.42	15.583	3.20	21.65	1.28
3.467	1.39	9.533	3.42	15.600	3.20	21.67	1.28
3.483	1.39	9.550	3.42	15.617	3.20	21.68	1.28
3.500	1.39	9.567	3.42	15.633	3.20	21.70	1.28
3.517	1.39	9.583	3.42	15.650	3.20	21.72	1.28
3.533	1.39	9.600	3.42	15.667	3.20	21.73	1.28
3.550	1.39	9.617	3.42	15.683	3.20	21.75	1.28
3.567	1.39	9.633	3.42	15.700	3.20	21.77	1.28
3.583	1.39	9.650	3.42	15.717	3.20	21.78	1.28
3.600	1.39	9.667	3.42	15.733	3.20	21.80	1.28
3.617	1.39	9.683	3.42	15.750	3.20	21.82	1.28
3.633	1.39	9.700	3.42	15.767	3.20	21.83	1.28
3.650	1.39	9.717	3.42	15.783	3.20	21.85	1.28
3.667	1.39	9.733	3.42	15.800	3.20	21.87	1.28
3.683	1.39	9.750	3.42	15.817	3.20	21.88	1.28
3.700	1.39	9.767	3.84	15.833	3.20	21.90	1.28
3.717	1.39	9.783	3.84	15.850	3.20	21.92	1.28
3.733	1.39	9.800	3.84	15.867	3.20	21.93	1.28
3.750	1.39	9.817	3.84	15.883	3.20	21.95	1.28
3.767	1.39	9.833	3.84	15.900	3.20	21.97	1.28
3.783	1.39	9.850	3.84	15.917	3.20	21.98	1.28

3.800	1.39	9.867	3.84	15.933	3.20	22.00	1.28
3.817	1.39	9.883	3.84	15.950	3.20	22.02	1.28
3.833	1.39	9.900	3.84	15.967	3.20	22.03	1.28
3.850	1.39	9.917	3.84	15.983	3.20	22.05	1.28
3.867	1.39	9.933	3.84	16.000	3.20	22.07	1.28
3.883	1.39	9.950	3.84	16.017	3.20	22.08	1.28
3.900	1.39	9.967	3.84	16.033	3.20	22.10	1.28
3.917	1.39	9.983	3.84	16.050	3.20	22.12	1.28
3.933	1.39	10.000	3.84	16.067	3.20	22.13	1.28
3.950	1.39	10.017	3.84	16.083	3.20	22.15	1.28
3.967	1.39	10.033	3.84	16.100	3.20	22.17	1.28
3.983	1.39	10.050	3.84	16.117	3.20	22.18	1.28
4.000	1.39	10.067	3.84	16.133	3.20	22.20	1.28
4.017	1.39	10.083	3.84	16.150	3.20	22.22	1.28
4.033	1.39	10.100	3.84	16.167	3.20	22.23	1.28
4.050	1.39	10.117	3.84	16.183	3.20	22.25	1.28
4.067	1.39	10.133	3.84	16.200	3.20	22.27	1.28
4.083	1.39	10.150	3.84	16.217	3.20	22.28	1.28
4.100	1.39	10.167	3.84	16.233	3.20	22.30	1.28
4.117	1.39	10.183	3.84	16.250	3.20	22.32	1.28
4.133	1.39	10.200	3.84	16.267	1.93	22.33	1.28
4.150	1.39	10.217	3.84	16.283	1.92	22.35	1.28
4.167	1.39	10.233	3.84	16.300	1.92	22.37	1.28
4.183	1.39	10.250	3.84	16.317	1.92	22.38	1.28
4.200	1.39	10.267	4.91	16.333	1.92	22.40	1.28
4.217	1.39	10.283	4.91	16.350	1.92	22.42	1.28
4.233	1.39	10.300	4.91	16.367	1.92	22.43	1.28
4.250	1.39	10.317	4.91	16.383	1.92	22.45	1.28
4.267	1.71	10.333	4.91	16.400	1.92	22.47	1.28
4.283	1.71	10.350	4.91	16.417	1.92	22.48	1.28
4.300	1.71	10.367	4.91	16.433	1.92	22.50	1.28
4.317	1.71	10.383	4.91	16.450	1.92	22.52	1.28
4.333	1.71	10.400	4.91	16.467	1.92	22.53	1.28
4.350	1.71	10.417	4.91	16.483	1.92	22.55	1.28
4.367	1.71	10.433	4.91	16.500	1.92	22.57	1.28
4.383	1.71	10.450	4.91	16.517	1.92	22.58	1.28
4.400	1.71	10.467	4.91	16.533	1.92	22.60	1.28
4.417	1.71	10.483	4.91	16.550	1.92	22.62	1.28
4.433	1.71	10.500	4.91	16.567	1.92	22.63	1.28
4.450	1.71	10.517	4.91	16.583	1.92	22.65	1.28
4.467	1.71	10.533	4.91	16.600	1.92	22.67	1.28
4.483	1.71	10.550	4.91	16.617	1.92	22.68	1.28
4.500	1.71	10.567	4.91	16.633	1.92	22.70	1.28
4.517	1.71	10.583	4.91	16.650	1.92	22.72	1.28
4.533	1.71	10.600	4.91	16.667	1.92	22.73	1.28
4.550	1.71	10.617	4.91	16.683	1.92	22.75	1.28
4.567	1.71	10.633	4.91	16.700	1.92	22.77	1.28
4.583	1.71	10.650	4.91	16.717	1.92	22.78	1.28
4.600	1.71	10.667	4.91	16.733	1.92	22.80	1.28
4.617	1.71	10.683	4.91	16.750	1.92	22.82	1.28
4.633	1.71	10.700	4.91	16.767	1.92	22.83	1.28
4.650	1.71	10.717	4.91	16.783	1.92	22.85	1.28
4.667	1.71	10.733	4.91	16.800	1.92	22.87	1.28
4.683	1.71	10.750	4.91	16.817	1.92	22.88	1.28
4.700	1.71	10.767	6.62	16.833	1.92	22.90	1.28
4.717	1.71	10.783	6.62	16.850	1.92	22.92	1.28
4.733	1.71	10.800	6.62	16.867	1.92	22.93	1.28
4.750	1.71	10.817	6.62	16.883	1.92	22.95	1.28
4.767	1.71	10.833	6.62	16.900	1.92	22.97	1.28
4.783	1.71	10.850	6.62	16.917	1.92	22.98	1.28
4.800	1.71	10.867	6.62	16.933	1.92	23.00	1.28
4.817	1.71	10.883	6.62	16.950	1.92	23.02	1.28
4.833	1.71	10.900	6.62	16.967	1.92	23.03	1.28
4.850	1.71	10.917	6.62	16.983	1.92	23.05	1.28
4.867	1.71	10.933	6.62	17.000	1.92	23.07	1.28
4.883	1.71	10.950	6.62	17.017	1.92	23.08	1.28
4.900	1.71	10.967	6.62	17.033	1.92	23.10	1.28
4.917	1.71	10.983	6.62	17.050	1.92	23.12	1.28
4.933	1.71	11.000	6.62	17.067	1.92	23.13	1.28
4.950	1.71	11.017	6.62	17.083	1.92	23.15	1.28
4.967	1.71	11.033	6.62	17.100	1.92	23.17	1.28
4.983	1.71	11.050	6.62	17.117	1.92	23.18	1.28
5.000	1.71	11.067	6.62	17.133	1.92	23.20	1.28
5.017	1.71	11.083	6.62	17.150	1.92	23.22	1.28
5.033	1.71	11.100	6.62	17.167	1.92	23.23	1.28
5.050	1.71	11.117	6.62	17.183	1.92	23.25	1.28
5.067	1.71	11.133	6.62	17.200	1.92	23.27	1.28
5.083	1.71	11.150	6.62	17.217	1.92	23.28	1.28
5.100	1.71	11.167	6.62	17.233	1.92	23.30	1.28
5.117	1.71	11.183	6.62	17.250	1.92	23.32	1.28
5.133	1.71	11.200	6.62	17.267	1.92	23.33	1.28
5.150	1.71	11.217	6.62	17.283	1.92	23.35	1.28
5.167	1.71	11.233	6.62	17.300	1.92	23.37	1.28
5.183	1.71	11.250	6.62	17.317	1.92	23.38	1.28
5.200	1.71	11.267	10.25	17.333	1.92	23.40	1.28
5.217	1.71	11.283	10.25	17.350	1.92	23.42	1.28
5.233	1.71	11.300	10.25	17.367	1.92	23.43	1.28
5.250	1.71	11.317	10.25	17.383	1.92	23.45	1.28
5.267	1.71	11.333	10.25	17.400	1.92	23.47	1.28
5.283	1.71	11.350	10.25	17.417	1.92	23.48	1.28
5.300	1.71	11.367	10.25	17.433	1.92	23.50	1.28
5.317	1.71	11.383	10.25	17.450	1.92	23.52	1.28
5.333	1.71	11.400	10.25	17.467	1.92	23.53	1.28
5.350	1.71	11.417	10.25	17.483	1.92	23.55	1.28
5.367	1.71	11.433	10.25	17.500	1.92	23.57	1.28
5.383	1.71	11.450	10.25	17.517	1.92	23.58	1.28
5.400	1.71	11.467	10.25	17.533	1.92	23.60	1.28
5.417	1.71	11.483	10.25	17.550	1.92	23.62	1.28
5.433	1.71	11.500	10.25	17.567	1.92	23.63	1.28
5.450	1.71	11.517	10.25	17.583	1.92	23.65	1.28

5.467	1.71	11.533	10.25	17.600	1.92	23.67	1.28
5.483	1.71	11.550	10.25	17.617	1.92	23.68	1.28
5.500	1.71	11.567	10.25	17.633	1.92	23.70	1.28
5.517	1.71	11.583	10.25	17.650	1.92	23.72	1.28
5.533	1.71	11.600	10.25	17.667	1.92	23.73	1.28
5.550	1.71	11.617	10.25	17.683	1.92	23.75	1.28
5.567	1.71	11.633	10.25	17.700	1.92	23.77	1.28
5.583	1.71	11.650	10.25	17.717	1.92	23.78	1.28
5.600	1.71	11.667	10.25	17.733	1.92	23.80	1.28
5.617	1.71	11.683	10.25	17.750	1.92	23.82	1.28
5.633	1.71	11.700	10.25	17.767	1.92	23.83	1.28
5.650	1.71	11.717	10.25	17.783	1.92	23.85	1.28
5.667	1.71	11.733	10.25	17.800	1.92	23.87	1.28
5.683	1.71	11.750	10.25	17.817	1.92	23.88	1.28
5.700	1.71	11.767	31.58	17.833	1.92	23.90	1.28
5.717	1.71	11.783	31.60	17.850	1.92	23.92	1.28
5.733	1.71	11.800	31.60	17.867	1.92	23.93	1.28
5.750	1.71	11.817	31.60	17.883	1.92	23.95	1.28
5.767	1.71	11.833	31.60	17.900	1.92	23.97	1.28
5.783	1.71	11.850	31.60	17.917	1.92	23.98	1.28
5.800	1.71	11.867	31.60	17.933	1.92	24.00	1.28
5.817	1.71	11.883	31.60	17.950	1.92	24.02	1.28
5.833	1.71	11.900	31.60	17.967	1.92	24.03	1.28
5.850	1.71	11.917	31.60	17.983	1.92	24.05	1.28
5.867	1.71	11.933	31.60	18.000	1.92	24.07	1.28
5.883	1.71	11.950	31.60	18.017	1.92	24.08	1.28
5.900	1.71	11.967	31.60	18.033	1.92	24.10	1.28
5.917	1.71	11.983	31.60	18.050	1.92	24.12	1.28
5.933	1.71	12.000	31.60	18.067	1.92	24.13	1.28
5.950	1.71	12.017	130.58	18.083	1.92	24.15	1.28
5.967	1.71	12.033	130.65	18.100	1.92	24.17	1.28
5.983	1.71	12.050	130.65	18.117	1.92	24.18	1.28
6.000	1.71	12.067	130.65	18.133	1.92	24.20	1.28
6.017	1.71	12.083	130.65	18.150	1.92	24.22	1.28
6.033	1.71	12.100	130.65	18.167	1.92	24.23	1.28
6.050	1.71	12.117	130.65	18.183	1.92	24.25	1.28
6.067	1.71	12.133	130.65	18.200	1.92		

Max.Eff.Inten.(mm/hr)=	130.65	38.54	
over (min)	5.00	2.00	
Storage Coeff. (min)=	0.80 (ii)	1.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.50	0.58	
			TOTALS
PEAK FLOW (cms)=	0.03	0.00	0.032 (iii)
TIME TO PEAK (hrs)=	12.23	12.25	12.25
RUNOFF VOLUME (mm)=	104.74	26.67	100.83
TOTAL RAINFALL (mm)=	106.74	106.74	106.74
RUNOFF COEFFICIENT =	0.98	0.25	0.94

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ALLOWABLE CONDITION (CONSIDERING 50% IMPERVIOUSNESS)

DETAILED OUTPUT

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************************************
** SIMULATION:01- 2yr-4hr Chicago **
************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 732.950
| Ptotal= 33.89 mm |                          B=   6.200
--------------------                          C=   0.810
                       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    2.05 |  1.00   18.21 |  2.00    5.10 |  3.00    2.46
                0.17    2.37 |  1.17   76.80 |  2.17    4.29 |  3.17    2.28
                0.33    2.81 |  1.33   24.08 |  2.33    3.72 |  3.33    2.12
                0.50    3.50 |  1.50   12.36 |  2.50    3.29 |  3.50    1.99
                0.67    4.69 |  1.67    8.32 |  2.67    2.95 |  3.67    1.87
                0.83    7.31 |  1.83    6.30 |  2.83    2.68 |  3.83    1.77


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--------------------
| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   0.09
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.05         0.05
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      24.49        15.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.017    2.05 | 1.017   18.21 | 2.017    5.10 |  3.02    2.46
               0.033    2.05 | 1.033   18.21 | 2.033    5.10 |  3.03    2.46
               0.050    2.05 | 1.050   18.21 | 2.050    5.10 |  3.05    2.46
               0.067    2.05 | 1.067   18.21 | 2.067    5.10 |  3.07    2.46
               0.083    2.05 | 1.083   18.21 | 2.083    5.10 |  3.08    2.46
               0.100    2.05 | 1.100   18.21 | 2.100    5.10 |  3.10    2.46
               0.117    2.05 | 1.117   18.21 | 2.117    5.10 |  3.12    2.46
               0.133    2.05 | 1.133   18.21 | 2.133    5.10 |  3.13    2.46
               0.150    2.05 | 1.150   18.21 | 2.150    5.10 |  3.15    2.46
               0.167    2.05 | 1.167   18.21 | 2.167    5.10 |  3.17    2.46
               0.183    2.37 | 1.183   76.80 | 2.183    4.29 |  3.18    2.28
               0.200    2.37 | 1.200   76.80 | 2.200    4.29 |  3.20    2.28
               0.217    2.37 | 1.217   76.80 | 2.217    4.29 |  3.22    2.28
               0.233    2.37 | 1.233   76.80 | 2.233    4.29 |  3.23    2.28
               0.250    2.37 | 1.250   76.80 | 2.250    4.29 |  3.25    2.28
               0.267    2.37 | 1.267   76.80 | 2.267    4.29 |  3.27    2.28
               0.283    2.37 | 1.283   76.80 | 2.283    4.29 |  3.28    2.28
               0.300    2.37 | 1.300   76.80 | 2.300    4.29 |  3.30    2.28
               0.317    2.37 | 1.317   76.80 | 2.317    4.29 |  3.32    2.28
               0.333    2.37 | 1.333   76.80 | 2.333    4.29 |  3.33    2.28
               0.350    2.81 | 1.350   24.08 | 2.350    3.72 |  3.35    2.12
               0.367    2.81 | 1.367   24.08 | 2.367    3.72 |  3.37    2.12
               0.383    2.81 | 1.383   24.08 | 2.383    3.72 |  3.38    2.12
               0.400    2.81 | 1.400   24.08 | 2.400    3.72 |  3.40    2.12
               0.417    2.81 | 1.417   24.08 | 2.417    3.72 |  3.42    2.12
               0.433    2.81 | 1.433   24.08 | 2.433    3.72 |  3.43    2.12
               0.450    2.81 | 1.450   24.08 | 2.450    3.72 |  3.45    2.12
               0.467    2.81 | 1.467   24.08 | 2.467    3.72 |  3.47    2.12
               0.483    2.81 | 1.483   24.08 | 2.483    3.72 |  3.48    2.12
               0.500    2.81 | 1.500   24.08 | 2.500    3.72 |  3.50    2.12
               0.517    3.50 | 1.517   12.36 | 2.517    3.29 |  3.52    1.99
               0.533    3.50 | 1.533   12.36 | 2.533    3.29 |  3.53    1.99
               0.550    3.50 | 1.550   12.36 | 2.550    3.29 |  3.55    1.99
               0.567    3.50 | 1.567   12.36 | 2.567    3.29 |  3.57    1.99
               0.583    3.50 | 1.583   12.36 | 2.583    3.29 |  3.58    1.99
               0.600    3.50 | 1.600   12.36 | 2.600    3.29 |  3.60    1.99
               0.617    3.50 | 1.617   12.36 | 2.617    3.29 |  3.62    1.99
               0.633    3.50 | 1.633   12.36 | 2.633    3.29 |  3.63    1.99
               0.650    3.50 | 1.650   12.36 | 2.650    3.29 |  3.65    1.99
               0.667    3.50 | 1.667   12.36 | 2.667    3.29 |  3.67    1.99
               0.683    4.69 | 1.683    8.32 | 2.683    2.95 |  3.68    1.87
               0.700    4.69 | 1.700    8.32 | 2.700    2.95 |  3.70    1.87
               0.717    4.69 | 1.717    8.32 | 2.717    2.95 |  3.72    1.87
               0.733    4.69 | 1.733    8.32 | 2.733    2.95 |  3.73    1.87
               0.750    4.69 | 1.750    8.32 | 2.750    2.95 |  3.75    1.87
               0.767    4.69 | 1.767    8.32 | 2.767    2.95 |  3.77    1.87
               0.783    4.69 | 1.783    8.32 | 2.783    2.95 |  3.78    1.87
               0.800    4.69 | 1.800    8.32 | 2.800    2.95 |  3.80    1.87
               0.817    4.69 | 1.817    8.32 | 2.817    2.95 |  3.82    1.87
               0.833    4.69 | 1.833    8.32 | 2.833    2.95 |  3.83    1.87
               0.850    7.31 | 1.850    6.30 | 2.850    2.68 |  3.85    1.77
               0.867    7.31 | 1.867    6.30 | 2.867    2.68 |  3.87    1.77
               0.883    7.31 | 1.883    6.30 | 2.883    2.68 |  3.88    1.77
               0.900    7.31 | 1.900    6.30 | 2.900    2.68 |  3.90    1.77
               0.917    7.31 | 1.917    6.30 | 2.917    2.68 |  3.92    1.77
               0.933    7.31 | 1.933    6.30 | 2.933    2.68 |  3.93    1.77
               0.950    7.31 | 1.950    6.30 | 2.950    2.68 |  3.95    1.77
               0.967    7.31 | 1.967    6.30 | 2.967    2.68 |  3.97    1.77
```

0.983	7.31	1.983	6.30	2.983	2.68	3.98	1.77
1.000	7.31	2.000	6.30	3.000	2.68	4.00	1.77

Max.Eff.Inten.(mm/hr)=	76.80	4.33	
over (min)	5.00	6.00	
Storage Coeff. (min)=	0.99 (ii)	5.35 (ii)	
Unit Hyd. Tpeak (min)=	5.00	6.00	
Unit Hyd. peak (cms)=	0.48	0.20	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.010 (iii)
TIME TO PEAK (hrs)=	1.33	1.40	1.33
RUNOFF VOLUME (mm)=	31.89	2.65	17.25
TOTAL RAINFALL (mm)=	33.89	33.89	33.89
RUNOFF COEFFICIENT =	0.94	0.08	0.51

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:02- 5yr-4hr Chicago **
****

CHICAGO STORM
Ptotal= 46.17 mm

IDF curve parameters: A= 998.070
B= 6.050
C= 0.810
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.79	1.00	24.69	2.00	6.91	3.00	3.35
0.17	3.22	1.17	105.37	2.17	5.82	3.17	3.10
0.33	3.82	1.33	32.66	2.33	5.05	3.33	2.88
0.50	4.75	1.50	16.75	2.50	4.46	3.50	2.70
0.67	6.36	1.67	11.28	2.67	4.01	3.67	2.54
0.83	9.90	1.83	8.55	2.83	3.65	3.83	2.40

CALIB

STANDHYD (0101)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.79	1.017	24.69	2.017	6.91	3.02	3.35
0.033	2.79	1.033	24.69	2.033	6.91	3.03	3.35
0.050	2.79	1.050	24.69	2.050	6.91	3.05	3.35
0.067	2.79	1.067	24.69	2.067	6.91	3.07	3.35
0.083	2.79	1.083	24.69	2.083	6.91	3.08	3.35
0.100	2.79	1.100	24.69	2.100	6.91	3.10	3.35
0.117	2.79	1.117	24.69	2.117	6.91	3.12	3.35
0.133	2.79	1.133	24.69	2.133	6.91	3.13	3.35
0.150	2.79	1.150	24.69	2.150	6.91	3.15	3.35
0.167	2.79	1.167	24.69	2.167	6.91	3.17	3.35
0.183	3.22	1.183	105.37	2.183	5.82	3.18	3.10
0.200	3.22	1.200	105.37	2.200	5.82	3.20	3.10
0.217	3.22	1.217	105.37	2.217	5.82	3.22	3.10
0.233	3.22	1.233	105.37	2.233	5.82	3.23	3.10
0.250	3.22	1.250	105.37	2.250	5.82	3.25	3.10
0.267	3.22	1.267	105.37	2.267	5.82	3.27	3.10
0.283	3.22	1.283	105.37	2.283	5.82	3.28	3.10
0.300	3.22	1.300	105.37	2.300	5.82	3.30	3.10
0.317	3.22	1.317	105.37	2.317	5.82	3.32	3.10
0.333	3.22	1.333	105.37	2.333	5.82	3.33	3.10
0.350	3.82	1.350	32.67	2.350	5.05	3.35	2.88
0.367	3.82	1.367	32.66	2.367	5.05	3.37	2.88
0.383	3.82	1.383	32.66	2.383	5.05	3.38	2.88
0.400	3.82	1.400	32.66	2.400	5.05	3.40	2.88
0.417	3.82	1.417	32.66	2.417	5.05	3.42	2.88
0.433	3.82	1.433	32.66	2.433	5.05	3.43	2.88
0.450	3.82	1.450	32.66	2.450	5.05	3.45	2.88
0.467	3.82	1.467	32.66	2.467	5.05	3.47	2.88
0.483	3.82	1.483	32.66	2.483	5.05	3.48	2.88
0.500	3.82	1.500	32.66	2.500	5.05	3.50	2.88
0.517	4.75	1.517	16.75	2.517	4.46	3.52	2.70
0.533	4.75	1.533	16.75	2.533	4.46	3.53	2.70
0.550	4.75	1.550	16.75	2.550	4.46	3.55	2.70
0.567	4.75	1.567	16.75	2.567	4.46	3.57	2.70

0.583	4.75	1.583	16.75	2.583	4.46	3.58	2.70
0.600	4.75	1.600	16.75	2.600	4.46	3.60	2.70
0.617	4.75	1.617	16.75	2.617	4.46	3.62	2.70
0.633	4.75	1.633	16.75	2.633	4.46	3.63	2.70
0.650	4.75	1.650	16.75	2.650	4.46	3.65	2.70
0.667	4.75	1.667	16.75	2.667	4.46	3.67	2.70
0.683	6.36	1.683	11.28	2.683	4.01	3.68	2.54
0.700	6.36	1.700	11.28	2.700	4.01	3.70	2.54
0.717	6.36	1.717	11.28	2.717	4.01	3.72	2.54
0.733	6.36	1.733	11.28	2.733	4.01	3.73	2.54
0.750	6.36	1.750	11.28	2.750	4.01	3.75	2.54
0.767	6.36	1.767	11.28	2.767	4.01	3.77	2.54
0.783	6.36	1.783	11.28	2.783	4.01	3.78	2.54
0.800	6.36	1.800	11.28	2.800	4.01	3.80	2.54
0.817	6.36	1.817	11.28	2.817	4.01	3.82	2.54
0.833	6.36	1.833	11.28	2.833	4.01	3.83	2.54
0.850	9.90	1.850	8.55	2.850	3.65	3.85	2.40
0.867	9.90	1.867	8.55	2.867	3.65	3.87	2.40
0.883	9.90	1.883	8.55	2.883	3.65	3.88	2.40
0.900	9.90	1.900	8.55	2.900	3.65	3.90	2.40
0.917	9.90	1.917	8.55	2.917	3.65	3.92	2.40
0.933	9.90	1.933	8.55	2.933	3.65	3.93	2.40
0.950	9.90	1.950	8.55	2.950	3.65	3.95	2.40
0.967	9.90	1.967	8.55	2.967	3.65	3.97	2.40
0.983	9.90	1.983	8.55	2.983	3.65	3.98	2.40
1.000	9.90	2.000	8.55	3.000	3.65	4.00	2.40

Max.Eff.Inten.(mm/hr)=	105.37	8.97		
over (min)	5.00	5.00		
Storage Coeff. (min)=	0.87 (ii)	4.71 (ii)		
Unit Hyd. Tpeak (min)=	5.00	5.00		
Unit Hyd. peak (cms)=	0.49	0.24		
			TOTALS	
PEAK FLOW (cms)=	0.01	0.00	0.014 (iii)	
TIME TO PEAK (hrs)=	1.33	1.38	1.33	
RUNOFF VOLUME (mm)=	44.17	5.17	24.65	
TOTAL RAINFALL (mm)=	46.17	46.17	46.17	
RUNOFF COEFFICIENT =	0.96	0.11	0.53	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:03- 10yr-4hr Chicago **

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CHICAGO STORM	Ptotal= 51.41 mm

IDF curve parameters: A=1174.180
B= 6.010
C= 0.820
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.97	1.00	27.50	2.00	7.48	3.00	3.57
0.17	3.43	1.17	120.82	2.17	6.28	3.17	3.30
0.33	4.09	1.33	36.56	2.33	5.43	3.33	3.07
0.50	5.10	1.50	18.48	2.50	4.79	3.50	2.87
0.67	6.87	1.67	12.34	2.67	4.29	3.67	2.70
0.83	10.80	1.83	9.29	2.83	3.90	3.83	2.55

CALIB	STANDHYD (0101)	ID= 1 DT= 1.0 min

Area (ha)= 0.09
Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.97	1.017	27.50	2.017	7.48	3.02	3.57
0.033	2.97	1.033	27.50	2.033	7.48	3.03	3.57
0.050	2.97	1.050	27.50	2.050	7.48	3.05	3.57
0.067	2.97	1.067	27.50	2.067	7.48	3.07	3.57
0.083	2.97	1.083	27.50	2.083	7.48	3.08	3.57
0.100	2.97	1.100	27.50	2.100	7.48	3.10	3.57
0.117	2.97	1.117	27.50	2.117	7.48	3.12	3.57
0.133	2.97	1.133	27.50	2.133	7.48	3.13	3.57
0.150	2.97	1.150	27.50	2.150	7.48	3.15	3.57
0.167	2.97	1.167	27.50	2.167	7.48	3.17	3.57

0.183	3.43	1.183	120.82	2.183	6.28	3.18	3.30
0.200	3.43	1.200	120.82	2.200	6.28	3.20	3.30
0.217	3.43	1.217	120.82	2.217	6.28	3.22	3.30
0.233	3.43	1.233	120.82	2.233	6.28	3.23	3.30
0.250	3.43	1.250	120.82	2.250	6.28	3.25	3.30
0.267	3.43	1.267	120.82	2.267	6.28	3.27	3.30
0.283	3.43	1.283	120.82	2.283	6.28	3.28	3.30
0.300	3.43	1.300	120.82	2.300	6.28	3.30	3.30
0.317	3.43	1.317	120.82	2.317	6.28	3.32	3.30
0.333	3.43	1.333	120.82	2.333	6.28	3.33	3.30
0.350	4.09	1.350	36.56	2.350	5.43	3.35	3.07
0.367	4.09	1.367	36.56	2.367	5.43	3.37	3.07
0.383	4.09	1.383	36.56	2.383	5.43	3.38	3.07
0.400	4.09	1.400	36.56	2.400	5.43	3.40	3.07
0.417	4.09	1.417	36.56	2.417	5.43	3.42	3.07
0.433	4.09	1.433	36.56	2.433	5.43	3.43	3.07
0.450	4.09	1.450	36.56	2.450	5.43	3.45	3.07
0.467	4.09	1.467	36.56	2.467	5.43	3.47	3.07
0.483	4.09	1.483	36.56	2.483	5.43	3.48	3.07
0.500	4.09	1.500	36.56	2.500	5.43	3.50	3.07
0.517	5.10	1.517	18.48	2.517	4.79	3.52	2.87
0.533	5.10	1.533	18.48	2.533	4.79	3.53	2.87
0.550	5.10	1.550	18.48	2.550	4.79	3.55	2.87
0.567	5.10	1.567	18.48	2.567	4.79	3.57	2.87
0.583	5.10	1.583	18.48	2.583	4.79	3.58	2.87
0.600	5.10	1.600	18.48	2.600	4.79	3.60	2.87
0.617	5.10	1.617	18.48	2.617	4.79	3.62	2.87
0.633	5.10	1.633	18.48	2.633	4.79	3.63	2.87
0.650	5.10	1.650	18.48	2.650	4.79	3.65	2.87
0.667	5.10	1.667	18.48	2.667	4.79	3.67	2.87
0.683	6.87	1.683	12.34	2.683	4.29	3.68	2.70
0.700	6.87	1.700	12.34	2.700	4.29	3.70	2.70
0.717	6.87	1.717	12.34	2.717	4.29	3.72	2.70
0.733	6.87	1.733	12.34	2.733	4.29	3.73	2.70
0.750	6.87	1.750	12.34	2.750	4.29	3.75	2.70
0.767	6.87	1.767	12.34	2.767	4.29	3.77	2.70
0.783	6.87	1.783	12.34	2.783	4.29	3.78	2.70
0.800	6.87	1.800	12.34	2.800	4.29	3.80	2.70
0.817	6.87	1.817	12.34	2.817	4.29	3.82	2.70
0.833	6.87	1.833	12.34	2.833	4.29	3.83	2.70
0.850	10.80	1.850	9.29	2.850	3.90	3.85	2.55
0.867	10.80	1.867	9.29	2.867	3.90	3.87	2.55
0.883	10.80	1.883	9.29	2.883	3.90	3.88	2.55
0.900	10.80	1.900	9.29	2.900	3.90	3.90	2.55
0.917	10.80	1.917	9.29	2.917	3.90	3.92	2.55
0.933	10.80	1.933	9.29	2.933	3.90	3.93	2.55
0.950	10.80	1.950	9.29	2.950	3.90	3.95	2.55
0.967	10.80	1.967	9.29	2.967	3.90	3.97	2.55
0.983	10.80	1.983	9.29	2.983	3.90	3.98	2.55
1.000	10.80	2.000	9.29	3.000	3.90	4.00	2.55

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     Max.Eff.Inten.(mm/hr)=     120.82        11.82
                 over (min)        5.00         5.00
     Storage Coeff.  (min)=       0.83 (ii)    4.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.50         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.016 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.38           1.33
     RUNOFF VOLUME    (mm)=      49.41         6.47          27.92
     TOTAL RAINFALL   (mm)=      51.41        51.41          51.41
     RUNOFF COEFFICIENT   =       0.96         0.13           0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  47.0    Ia = Dep. 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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************************************
** SIMULATION:04- 25yr-4hr Chicago **
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| CHICAGO STORM    |    IDF curve parameters: A=1402.880
| Ptotal= 61.43 mm |                          B=   6.020
--------------------                          C=   0.820
                       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    3.55 |  1.00   32.87 |  2.00    8.94 |  3.00    4.27
                0.17    4.10 |  1.17  144.28 |  2.17    7.51 |  3.17    3.94
                0.33    4.89 |  1.33   43.69 |  2.33    6.49 |  3.33    3.67
                0.50    6.10 |  1.50   22.09 |  2.50    5.72 |  3.50    3.43
                0.67    8.21 |  1.67   14.75 |  2.67    5.13 |  3.67    3.23
                0.83   12.91 |  1.83   11.11 |  2.83    4.66 |  3.83    3.05


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| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   0.09
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.55	1.017	32.87	2.017	8.94	3.02	4.27
0.033	3.55	1.033	32.87	2.033	8.94	3.03	4.27
0.050	3.55	1.050	32.87	2.050	8.94	3.05	4.27
0.067	3.55	1.067	32.87	2.067	8.94	3.07	4.27
0.083	3.55	1.083	32.87	2.083	8.94	3.08	4.27
0.100	3.55	1.100	32.87	2.100	8.94	3.10	4.27
0.117	3.55	1.117	32.87	2.117	8.94	3.12	4.27
0.133	3.55	1.133	32.87	2.133	8.94	3.13	4.27
0.150	3.55	1.150	32.87	2.150	8.94	3.15	4.27
0.167	3.55	1.167	32.87	2.167	8.94	3.17	4.27
0.183	4.10	1.183	144.27	2.183	7.51	3.18	3.94
0.200	4.10	1.200	144.28	2.200	7.51	3.20	3.94
0.217	4.10	1.217	144.28	2.217	7.51	3.22	3.94
0.233	4.10	1.233	144.28	2.233	7.51	3.23	3.94
0.250	4.10	1.250	144.28	2.250	7.51	3.25	3.94
0.267	4.10	1.267	144.28	2.267	7.51	3.27	3.94
0.283	4.10	1.283	144.28	2.283	7.51	3.28	3.94
0.300	4.10	1.300	144.28	2.300	7.51	3.30	3.94
0.317	4.10	1.317	144.28	2.317	7.51	3.32	3.94
0.333	4.10	1.333	144.28	2.333	7.51	3.33	3.94
0.350	4.89	1.350	43.70	2.350	6.49	3.35	3.67
0.367	4.89	1.367	43.69	2.367	6.49	3.37	3.67
0.383	4.89	1.383	43.69	2.383	6.49	3.38	3.67
0.400	4.89	1.400	43.69	2.400	6.49	3.40	3.67
0.417	4.89	1.417	43.69	2.417	6.49	3.42	3.67
0.433	4.89	1.433	43.69	2.433	6.49	3.43	3.67
0.450	4.89	1.450	43.69	2.450	6.49	3.45	3.67
0.467	4.89	1.467	43.69	2.467	6.49	3.47	3.67
0.483	4.89	1.483	43.69	2.483	6.49	3.48	3.67
0.500	4.89	1.500	43.69	2.500	6.49	3.50	3.67
0.517	6.10	1.517	22.09	2.517	5.72	3.52	3.43
0.533	6.10	1.533	22.09	2.533	5.72	3.53	3.43
0.550	6.10	1.550	22.09	2.550	5.72	3.55	3.43
0.567	6.10	1.567	22.09	2.567	5.72	3.57	3.43
0.583	6.10	1.583	22.09	2.583	5.72	3.58	3.43
0.600	6.10	1.600	22.09	2.600	5.72	3.60	3.43
0.617	6.10	1.617	22.09	2.617	5.72	3.62	3.43
0.633	6.10	1.633	22.09	2.633	5.72	3.63	3.43
0.650	6.10	1.650	22.09	2.650	5.72	3.65	3.43
0.667	6.10	1.667	22.09	2.667	5.72	3.67	3.43
0.683	8.21	1.683	14.75	2.683	5.13	3.68	3.23
0.700	8.21	1.700	14.75	2.700	5.13	3.70	3.23
0.717	8.21	1.717	14.75	2.717	5.13	3.72	3.23
0.733	8.21	1.733	14.75	2.733	5.13	3.73	3.23
0.750	8.21	1.750	14.75	2.750	5.13	3.75	3.23
0.767	8.21	1.767	14.75	2.767	5.13	3.77	3.23
0.783	8.21	1.783	14.75	2.783	5.13	3.78	3.23
0.800	8.21	1.800	14.75	2.800	5.13	3.80	3.23
0.817	8.21	1.817	14.75	2.817	5.13	3.82	3.23
0.833	8.21	1.833	14.75	2.833	5.13	3.83	3.23
0.850	12.91	1.850	11.11	2.850	4.66	3.85	3.05
0.867	12.91	1.867	11.11	2.867	4.66	3.87	3.05
0.883	12.91	1.883	11.11	2.883	4.66	3.88	3.05
0.900	12.91	1.900	11.11	2.900	4.66	3.90	3.05
0.917	12.91	1.917	11.11	2.917	4.66	3.92	3.05
0.933	12.91	1.933	11.11	2.933	4.66	3.93	3.05
0.950	12.91	1.950	11.11	2.950	4.66	3.95	3.05
0.967	12.91	1.967	11.11	2.967	4.66	3.97	3.05
0.983	12.91	1.983	11.11	2.983	4.66	3.98	3.05
1.000	12.91	2.000	11.11	3.000	4.66	4.00	3.05

Max.Eff.Inten.(mm/hr)=		144.28	17.32	
over (min)		5.00	5.00	
Storage Coeff. (min)=		0.77 (ii)	4.15 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.50	0.25	
				TOTALS
PEAK FLOW	(cms)=	0.02	0.00	0.020 (iii)
TIME TO PEAK	(hrs)=	1.33	1.37	1.33
RUNOFF VOLUME	(mm)=	59.43	9.29	34.34
TOTAL RAINFALL	(mm)=	61.43	61.43	61.43
RUNOFF COEFFICIENT	=	0.97	0.15	0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:05- 50yr-4hr Chicago **
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| CHICAGO STORM | IDF curve parameters: A=1569.580
| Ptotal= 68.73 mm | B= 6.010
C= 0.820
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.97	1.00	36.76	2.00	10.00	3.00	4.77
0.17	4.59	1.17	161.50	2.17	8.40	3.17	4.41
0.33	5.47	1.33	48.87	2.33	7.26	3.33	4.10
0.50	6.82	1.50	24.70	2.50	6.40	3.50	3.84
0.67	9.19	1.67	16.49	2.67	5.74	3.67	3.61
0.83	14.44	1.83	12.42	2.83	5.21	3.83	3.41

CALIB	STANDHYD (0101)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.97	1.017	36.76	2.017	10.00	3.02	4.77
0.033	3.97	1.033	36.76	2.033	10.00	3.03	4.77
0.050	3.97	1.050	36.76	2.050	10.00	3.05	4.77
0.067	3.97	1.067	36.76	2.067	10.00	3.07	4.77
0.083	3.97	1.083	36.76	2.083	10.00	3.08	4.77
0.100	3.97	1.100	36.76	2.100	10.00	3.10	4.77
0.117	3.97	1.117	36.76	2.117	10.00	3.12	4.77
0.133	3.97	1.133	36.76	2.133	10.00	3.13	4.77
0.150	3.97	1.150	36.76	2.150	10.00	3.15	4.77
0.167	3.97	1.167	36.76	2.167	10.00	3.17	4.77
0.183	4.59	1.183	161.50	2.183	8.40	3.18	4.41
0.200	4.59	1.200	161.50	2.200	8.40	3.20	4.41
0.217	4.59	1.217	161.50	2.217	8.40	3.22	4.41
0.233	4.59	1.233	161.50	2.233	8.40	3.23	4.41
0.250	4.59	1.250	161.50	2.250	8.40	3.25	4.41
0.267	4.59	1.267	161.50	2.267	8.40	3.27	4.41
0.283	4.59	1.283	161.50	2.283	8.40	3.28	4.41
0.300	4.59	1.300	161.50	2.300	8.40	3.30	4.41
0.317	4.59	1.317	161.50	2.317	8.40	3.32	4.41
0.333	4.59	1.333	161.50	2.333	8.40	3.33	4.41
0.350	5.47	1.350	48.87	2.350	7.26	3.35	4.10
0.367	5.47	1.367	48.87	2.367	7.26	3.37	4.10
0.383	5.47	1.383	48.87	2.383	7.26	3.38	4.10
0.400	5.47	1.400	48.87	2.400	7.26	3.40	4.10
0.417	5.47	1.417	48.87	2.417	7.26	3.42	4.10
0.433	5.47	1.433	48.87	2.433	7.26	3.43	4.10
0.450	5.47	1.450	48.87	2.450	7.26	3.45	4.10
0.467	5.47	1.467	48.87	2.467	7.26	3.47	4.10
0.483	5.47	1.483	48.87	2.483	7.26	3.48	4.10
0.500	5.47	1.500	48.87	2.500	7.26	3.50	4.10
0.517	6.82	1.517	24.70	2.517	6.40	3.52	3.84
0.533	6.82	1.533	24.70	2.533	6.40	3.53	3.84
0.550	6.82	1.550	24.70	2.550	6.40	3.55	3.84
0.567	6.82	1.567	24.70	2.567	6.40	3.57	3.84
0.583	6.82	1.583	24.70	2.583	6.40	3.58	3.84
0.600	6.82	1.600	24.70	2.600	6.40	3.60	3.84
0.617	6.82	1.617	24.70	2.617	6.40	3.62	3.84
0.633	6.82	1.633	24.70	2.633	6.40	3.63	3.84
0.650	6.82	1.650	24.70	2.650	6.40	3.65	3.84
0.667	6.82	1.667	24.70	2.667	6.40	3.67	3.84
0.683	9.19	1.683	16.49	2.683	5.74	3.68	3.61
0.700	9.19	1.700	16.49	2.700	5.74	3.70	3.61
0.717	9.19	1.717	16.49	2.717	5.74	3.72	3.61
0.733	9.19	1.733	16.49	2.733	5.74	3.73	3.61
0.750	9.19	1.750	16.49	2.750	5.74	3.75	3.61
0.767	9.19	1.767	16.49	2.767	5.74	3.77	3.61
0.783	9.19	1.783	16.49	2.783	5.74	3.78	3.61
0.800	9.19	1.800	16.49	2.800	5.74	3.80	3.61
0.817	9.19	1.817	16.49	2.817	5.74	3.82	3.61
0.833	9.19	1.833	16.49	2.833	5.74	3.83	3.61
0.850	14.44	1.850	12.42	2.850	5.21	3.85	3.41
0.867	14.44	1.867	12.42	2.867	5.21	3.87	3.41
0.883	14.44	1.883	12.42	2.883	5.21	3.88	3.41
0.900	14.44	1.900	12.42	2.900	5.21	3.90	3.41
0.917	14.44	1.917	12.42	2.917	5.21	3.92	3.41
0.933	14.44	1.933	12.42	2.933	5.21	3.93	3.41
0.950	14.44	1.950	12.42	2.950	5.21	3.95	3.41
0.967	14.44	1.967	12.42	2.967	5.21	3.97	3.41
0.983	14.44	1.983	12.42	2.983	5.21	3.98	3.41
1.000	14.44	2.000	12.42	3.000	5.21	4.00	3.41

Max.Eff.Inten.(mm/hr)= 161.50 21.95

over (min)	5.00	4.00	
Storage Coeff. (min)=	0.74 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=	5.00	4.00	
Unit Hyd. peak (cms)=	0.51	0.28	
			TOTALS
PEAK FLOW (cms)=	0.02	0.00	0.023 (iii)
TIME TO PEAK (hrs)=	1.33	1.37	1.33
RUNOFF VOLUME (mm)=	66.73	11.60	39.15
TOTAL RAINFALL (mm)=	68.73	68.73	68.73
RUNOFF COEFFICIENT =	0.97	0.17	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:06- 100yr-4hr Chicago **
****

CHICAGO STORM
Ptotal= 76.00 mm

IDF curve parameters: A=1735.690
B= 6.010
C= 0.820
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.39	1.00	40.65	2.00	11.06	3.00	5.28
0.17	5.07	1.17	178.60	2.17	9.28	3.17	4.88
0.33	6.05	1.33	54.04	2.33	8.02	3.33	4.54
0.50	7.54	1.50	27.31	2.50	7.08	3.50	4.25
0.67	10.16	1.67	18.24	2.67	6.35	3.67	3.99
0.83	15.97	1.83	13.74	2.83	5.76	3.83	3.77

CALIB
STANDHYD (0101)
ID= 1 DT= 1.0 min

Area (ha)= 0.09
Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.05
Dep. Storage (mm)=	2.00	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	24.49	15.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	4.39	1.017	40.65	2.017	11.06	3.02	5.28
0.033	4.39	1.033	40.65	2.033	11.06	3.03	5.28
0.050	4.39	1.050	40.65	2.050	11.06	3.05	5.28
0.067	4.39	1.067	40.65	2.067	11.06	3.07	5.28
0.083	4.39	1.083	40.65	2.083	11.06	3.08	5.28
0.100	4.39	1.100	40.65	2.100	11.06	3.10	5.28
0.117	4.39	1.117	40.65	2.117	11.06	3.12	5.28
0.133	4.39	1.133	40.65	2.133	11.06	3.13	5.28
0.150	4.39	1.150	40.65	2.150	11.06	3.15	5.28
0.167	4.39	1.167	40.65	2.167	11.06	3.17	5.28
0.183	5.07	1.183	178.59	2.183	9.28	3.18	4.88
0.200	5.07	1.200	178.60	2.200	9.28	3.20	4.88
0.217	5.07	1.217	178.60	2.217	9.28	3.22	4.88
0.233	5.07	1.233	178.60	2.233	9.28	3.23	4.88
0.250	5.07	1.250	178.60	2.250	9.28	3.25	4.88
0.267	5.07	1.267	178.60	2.267	9.28	3.27	4.88
0.283	5.07	1.283	178.60	2.283	9.28	3.28	4.88
0.300	5.07	1.300	178.60	2.300	9.28	3.30	4.88
0.317	5.07	1.317	178.60	2.317	9.28	3.32	4.88
0.333	5.07	1.333	178.60	2.333	9.28	3.33	4.88
0.350	6.05	1.350	54.05	2.350	8.02	3.35	4.54
0.367	6.05	1.367	54.04	2.367	8.02	3.37	4.54
0.383	6.05	1.383	54.04	2.383	8.02	3.38	4.54
0.400	6.05	1.400	54.04	2.400	8.02	3.40	4.54
0.417	6.05	1.417	54.04	2.417	8.02	3.42	4.54
0.433	6.05	1.433	54.04	2.433	8.02	3.43	4.54
0.450	6.05	1.450	54.04	2.450	8.02	3.45	4.54
0.467	6.05	1.467	54.04	2.467	8.02	3.47	4.54
0.483	6.05	1.483	54.04	2.483	8.02	3.48	4.54
0.500	6.05	1.500	54.04	2.500	8.02	3.50	4.54
0.517	7.54	1.517	27.32	2.517	7.08	3.52	4.25
0.533	7.54	1.533	27.31	2.533	7.08	3.53	4.25
0.550	7.54	1.550	27.31	2.550	7.08	3.55	4.25
0.567	7.54	1.567	27.31	2.567	7.08	3.57	4.25
0.583	7.54	1.583	27.31	2.583	7.08	3.58	4.25
0.600	7.54	1.600	27.31	2.600	7.08	3.60	4.25
0.617	7.54	1.617	27.31	2.617	7.08	3.62	4.25
0.633	7.54	1.633	27.31	2.633	7.08	3.63	4.25

0.650	7.54	1.650	27.31	2.650	7.08	3.65	4.25
0.667	7.54	1.667	27.31	2.667	7.08	3.67	4.25
0.683	10.16	1.683	18.24	2.683	6.35	3.68	3.99
0.700	10.16	1.700	18.24	2.700	6.35	3.70	3.99
0.717	10.16	1.717	18.24	2.717	6.35	3.72	3.99
0.733	10.16	1.733	18.24	2.733	6.35	3.73	3.99
0.750	10.16	1.750	18.24	2.750	6.35	3.75	3.99
0.767	10.16	1.767	18.24	2.767	6.35	3.77	3.99
0.783	10.16	1.783	18.24	2.783	6.35	3.78	3.99
0.800	10.16	1.800	18.24	2.800	6.35	3.80	3.99
0.817	10.16	1.817	18.24	2.817	6.35	3.82	3.99
0.833	10.16	1.833	18.24	2.833	6.35	3.83	3.99
0.850	15.97	1.850	13.74	2.850	5.76	3.85	3.77
0.867	15.97	1.867	13.74	2.867	5.76	3.87	3.77
0.883	15.97	1.883	13.74	2.883	5.76	3.88	3.77
0.900	15.97	1.900	13.74	2.900	5.76	3.90	3.77
0.917	15.97	1.917	13.74	2.917	5.76	3.92	3.77
0.933	15.97	1.933	13.74	2.933	5.76	3.93	3.77
0.950	15.97	1.950	13.74	2.950	5.76	3.95	3.77
0.967	15.97	1.967	13.74	2.967	5.76	3.97	3.77
0.983	15.97	1.983	13.74	2.983	5.76	3.98	3.77
1.000	15.97	2.000	13.74	3.000	5.76	4.00	3.77

Max.Eff.Inten.(mm/hr)=	178.60	27.03	
over (min)	5.00	4.00	
Storage Coeff. (min)=	0.71 (ii)	3.81 (ii)	
Unit Hyd. Tpeak (min)=	5.00	4.00	
Unit Hyd. peak (cms)=	0.51	0.29	
			TOTALS
PEAK FLOW (cms)=	0.02	0.00	0.026 (iii)
TIME TO PEAK (hrs)=	1.33	1.37	1.33
RUNOFF VOLUME (mm)=	74.00	14.10	44.03
TOTAL RAINFALL (mm)=	76.00	76.00	76.00
RUNOFF COEFFICIENT =	0.97	0.19	0.58

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:07- 2yr-24hr SCS **
****

| READ STORM | Filename: C:\Users\sthakkar\AppD

	ata\Local\Temp\
	3753745a-96ee-424b-bf39-441977d9a08f\18bdb04b
Ptotal= 48.47 mm	Comments: 2yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	0.87	12.50	6.98	18.75	0.87
0.25	0.53	6.50	0.87	12.75	3.59	19.00	0.87
0.50	0.53	6.75	0.87	13.00	3.59	19.25	0.87
0.75	0.53	7.00	0.87	13.25	2.62	19.50	0.87
1.00	0.53	7.25	1.07	13.50	2.62	19.75	0.87
1.25	0.53	7.50	1.07	13.75	2.04	20.00	0.87
1.50	0.53	7.75	1.07	14.00	2.04	20.25	0.58
1.75	0.53	8.00	1.07	14.25	1.45	20.50	0.58
2.00	0.53	8.25	1.26	14.50	1.45	20.75	0.58
2.25	0.63	8.50	1.26	14.75	1.45	21.00	0.58
2.50	0.63	8.75	1.36	15.00	1.45	21.25	0.58
2.75	0.63	9.00	1.36	15.25	1.45	21.50	0.58
3.00	0.63	9.25	1.55	15.50	1.45	21.75	0.58
3.25	0.63	9.50	1.55	15.75	1.45	22.00	0.58
3.50	0.63	9.75	1.74	16.00	1.45	22.25	0.58
3.75	0.63	10.00	1.74	16.25	0.87	22.50	0.58
4.00	0.63	10.25	2.23	16.50	0.87	22.75	0.58
4.25	0.78	10.50	2.23	16.75	0.87	23.00	0.58
4.50	0.78	10.75	3.01	17.00	0.87	23.25	0.58
4.75	0.78	11.00	3.01	17.25	0.87	23.50	0.58
5.00	0.78	11.25	4.65	17.50	0.87	23.75	0.58
5.25	0.78	11.50	4.65	17.75	0.87	24.00	0.58
5.50	0.78	11.75	14.35	18.00	0.87		
5.75	0.78	12.00	59.33	18.25	0.87		
6.00	0.78	12.25	6.98	18.50	0.87		

CALIB	
STANDHYD (0101)	Area (ha)= 0.09
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	0.00	6.083	0.78	12.150	59.33	18.22	0.87
0.033	0.00	6.100	0.78	12.167	59.33	18.23	0.87
0.050	0.00	6.117	0.78	12.183	59.33	18.25	0.87
0.067	0.00	6.133	0.78	12.200	59.33	18.27	0.87
0.083	0.00	6.150	0.78	12.217	59.33	18.28	0.87
0.100	0.00	6.167	0.78	12.233	59.33	18.30	0.87
0.117	0.00	6.183	0.78	12.250	59.33	18.32	0.87
0.133	0.00	6.200	0.78	12.267	7.03	18.33	0.87
0.150	0.00	6.217	0.78	12.283	6.98	18.35	0.87
0.167	0.00	6.233	0.78	12.300	6.98	18.37	0.87
0.183	0.00	6.250	0.78	12.317	6.98	18.38	0.87
0.200	0.00	6.267	0.87	12.333	6.98	18.40	0.87
0.217	0.00	6.283	0.87	12.350	6.98	18.42	0.87
0.233	0.00	6.300	0.87	12.367	6.98	18.43	0.87
0.250	0.00	6.317	0.87	12.383	6.98	18.45	0.87
0.267	0.53	6.333	0.87	12.400	6.98	18.47	0.87
0.283	0.53	6.350	0.87	12.417	6.98	18.48	0.87
0.300	0.53	6.367	0.87	12.433	6.98	18.50	0.87
0.317	0.53	6.383	0.87	12.450	6.98	18.52	0.87
0.333	0.53	6.400	0.87	12.467	6.98	18.53	0.87
0.350	0.53	6.417	0.87	12.483	6.98	18.55	0.87
0.367	0.53	6.433	0.87	12.500	6.98	18.57	0.87
0.383	0.53	6.450	0.87	12.517	6.98	18.58	0.87
0.400	0.53	6.467	0.87	12.533	6.98	18.60	0.87
0.417	0.53	6.483	0.87	12.550	6.98	18.62	0.87
0.433	0.53	6.500	0.87	12.567	6.98	18.63	0.87
0.450	0.53	6.517	0.87	12.583	6.98	18.65	0.87
0.467	0.53	6.533	0.87	12.600	6.98	18.67	0.87
0.483	0.53	6.550	0.87	12.617	6.98	18.68	0.87
0.500	0.53	6.567	0.87	12.633	6.98	18.70	0.87
0.517	0.53	6.583	0.87	12.650	6.98	18.72	0.87
0.533	0.53	6.600	0.87	12.667	6.98	18.73	0.87
0.550	0.53	6.617	0.87	12.683	6.98	18.75	0.87
0.567	0.53	6.633	0.87	12.700	6.98	18.77	0.87
0.583	0.53	6.650	0.87	12.717	6.98	18.78	0.87
0.600	0.53	6.667	0.87	12.733	6.98	18.80	0.87
0.617	0.53	6.683	0.87	12.750	6.98	18.82	0.87
0.633	0.53	6.700	0.87	12.767	3.59	18.83	0.87
0.650	0.53	6.717	0.87	12.783	3.59	18.85	0.87
0.667	0.53	6.733	0.87	12.800	3.59	18.87	0.87
0.683	0.53	6.750	0.87	12.817	3.59	18.88	0.87
0.700	0.53	6.767	0.87	12.833	3.59	18.90	0.87
0.717	0.53	6.783	0.87	12.850	3.59	18.92	0.87
0.733	0.53	6.800	0.87	12.867	3.59	18.93	0.87
0.750	0.53	6.817	0.87	12.883	3.59	18.95	0.87
0.767	0.53	6.833	0.87	12.900	3.59	18.97	0.87
0.783	0.53	6.850	0.87	12.917	3.59	18.98	0.87
0.800	0.53	6.867	0.87	12.933	3.59	19.00	0.87
0.817	0.53	6.883	0.87	12.950	3.59	19.02	0.87
0.833	0.53	6.900	0.87	12.967	3.59	19.03	0.87
0.850	0.53	6.917	0.87	12.983	3.59	19.05	0.87
0.867	0.53	6.933	0.87	13.000	3.59	19.07	0.87
0.883	0.53	6.950	0.87	13.017	3.59	19.08	0.87
0.900	0.53	6.967	0.87	13.033	3.59	19.10	0.87
0.917	0.53	6.983	0.87	13.050	3.59	19.12	0.87
0.933	0.53	7.000	0.87	13.067	3.59	19.13	0.87
0.950	0.53	7.017	0.87	13.083	3.59	19.15	0.87
0.967	0.53	7.033	0.87	13.100	3.59	19.17	0.87
0.983	0.53	7.050	0.87	13.117	3.59	19.18	0.87
1.000	0.53	7.067	0.87	13.133	3.59	19.20	0.87
1.017	0.53	7.083	0.87	13.150	3.59	19.22	0.87
1.033	0.53	7.100	0.87	13.167	3.59	19.23	0.87
1.050	0.53	7.117	0.87	13.183	3.59	19.25	0.87
1.067	0.53	7.133	0.87	13.200	3.59	19.27	0.87
1.083	0.53	7.150	0.87	13.217	3.59	19.28	0.87
1.100	0.53	7.167	0.87	13.233	3.59	19.30	0.87
1.117	0.53	7.183	0.87	13.250	3.59	19.32	0.87
1.133	0.53	7.200	0.87	13.267	2.62	19.33	0.87
1.150	0.53	7.217	0.87	13.283	2.62	19.35	0.87
1.167	0.53	7.233	0.87	13.300	2.62	19.37	0.87
1.183	0.53	7.250	0.87	13.317	2.62	19.38	0.87
1.200	0.53	7.267	1.07	13.333	2.62	19.40	0.87
1.217	0.53	7.283	1.07	13.350	2.62	19.42	0.87
1.233	0.53	7.300	1.07	13.367	2.62	19.43	0.87
1.250	0.53	7.317	1.07	13.383	2.62	19.45	0.87
1.267	0.53	7.333	1.07	13.400	2.62	19.47	0.87
1.283	0.53	7.350	1.07	13.417	2.62	19.48	0.87
1.300	0.53	7.367	1.07	13.433	2.62	19.50	0.87
1.317	0.53	7.383	1.07	13.450	2.62	19.52	0.87
1.333	0.53	7.400	1.07	13.467	2.62	19.53	0.87
1.350	0.53	7.417	1.07	13.483	2.62	19.55	0.87
1.367	0.53	7.433	1.07	13.500	2.62	19.57	0.87
1.383	0.53	7.450	1.07	13.517	2.62	19.58	0.87
1.400	0.53	7.467	1.07	13.533	2.62	19.60	0.87
1.417	0.53	7.483	1.07	13.550	2.62	19.62	0.87
1.433	0.53	7.500	1.07	13.567	2.62	19.63	0.87
1.450	0.53	7.517	1.07	13.583	2.62	19.65	0.87
1.467	0.53	7.533	1.07	13.600	2.62	19.67	0.87
1.483	0.53	7.550	1.07	13.617	2.62	19.68	0.87
1.500	0.53	7.567	1.07	13.633	2.62	19.70	0.87
1.517	0.53	7.583	1.07	13.650	2.62	19.72	0.87
1.533	0.53	7.600	1.07	13.667	2.62	19.73	0.87
1.550	0.53	7.617	1.07	13.683	2.62	19.75	0.87
1.567	0.53	7.633	1.07	13.700	2.62	19.77	0.87
1.583	0.53	7.650	1.07	13.717	2.62	19.78	0.87
1.600	0.53	7.667	1.07	13.733	2.62	19.80	0.87
1.617	0.53	7.683	1.07	13.750	2.62	19.82	0.87
1.633	0.53	7.700	1.07	13.767	2.04	19.83	0.87

1.650	0.53	7.717	1.07	13.783	2.04	19.85	0.87
1.667	0.53	7.733	1.07	13.800	2.04	19.87	0.87
1.683	0.53	7.750	1.07	13.817	2.04	19.88	0.87
1.700	0.53	7.767	1.07	13.833	2.04	19.90	0.87
1.717	0.53	7.783	1.07	13.850	2.04	19.92	0.87
1.733	0.53	7.800	1.07	13.867	2.04	19.93	0.87
1.750	0.53	7.817	1.07	13.883	2.04	19.95	0.87
1.767	0.53	7.833	1.07	13.900	2.04	19.97	0.87
1.783	0.53	7.850	1.07	13.917	2.04	19.98	0.87
1.800	0.53	7.867	1.07	13.933	2.04	20.00	0.87
1.817	0.53	7.883	1.07	13.950	2.04	20.02	0.87
1.833	0.53	7.900	1.07	13.967	2.04	20.03	0.87
1.850	0.53	7.917	1.07	13.983	2.04	20.05	0.87
1.867	0.53	7.933	1.07	14.000	2.04	20.07	0.87
1.883	0.53	7.950	1.07	14.017	2.04	20.08	0.87
1.900	0.53	7.967	1.07	14.033	2.04	20.10	0.87
1.917	0.53	7.983	1.07	14.050	2.04	20.12	0.87
1.933	0.53	8.000	1.07	14.067	2.04	20.13	0.87
1.950	0.53	8.017	1.07	14.083	2.04	20.15	0.87
1.967	0.53	8.033	1.07	14.100	2.04	20.17	0.87
1.983	0.53	8.050	1.07	14.117	2.04	20.18	0.87
2.000	0.53	8.067	1.07	14.133	2.04	20.20	0.87
2.017	0.53	8.083	1.07	14.150	2.04	20.22	0.87
2.033	0.53	8.100	1.07	14.167	2.04	20.23	0.87
2.050	0.53	8.117	1.07	14.183	2.04	20.25	0.87
2.067	0.53	8.133	1.07	14.200	2.04	20.27	0.58
2.083	0.53	8.150	1.07	14.217	2.04	20.28	0.58
2.100	0.53	8.167	1.07	14.233	2.04	20.30	0.58
2.117	0.53	8.183	1.07	14.250	2.04	20.32	0.58
2.133	0.53	8.200	1.07	14.267	1.46	20.33	0.58
2.150	0.53	8.217	1.07	14.283	1.45	20.35	0.58
2.167	0.53	8.233	1.07	14.300	1.45	20.37	0.58
2.183	0.53	8.250	1.07	14.317	1.45	20.38	0.58
2.200	0.53	8.267	1.26	14.333	1.45	20.40	0.58
2.217	0.53	8.283	1.26	14.350	1.45	20.42	0.58
2.233	0.53	8.300	1.26	14.367	1.45	20.43	0.58
2.250	0.53	8.317	1.26	14.383	1.45	20.45	0.58
2.267	0.63	8.333	1.26	14.400	1.45	20.47	0.58
2.283	0.63	8.350	1.26	14.417	1.45	20.48	0.58
2.300	0.63	8.367	1.26	14.433	1.45	20.50	0.58
2.317	0.63	8.383	1.26	14.450	1.45	20.52	0.58
2.333	0.63	8.400	1.26	14.467	1.45	20.53	0.58
2.350	0.63	8.417	1.26	14.483	1.45	20.55	0.58
2.367	0.63	8.433	1.26	14.500	1.45	20.57	0.58
2.383	0.63	8.450	1.26	14.517	1.45	20.58	0.58
2.400	0.63	8.467	1.26	14.533	1.45	20.60	0.58
2.417	0.63	8.483	1.26	14.550	1.45	20.62	0.58
2.433	0.63	8.500	1.26	14.567	1.45	20.63	0.58
2.450	0.63	8.517	1.26	14.583	1.45	20.65	0.58
2.467	0.63	8.533	1.26	14.600	1.45	20.67	0.58
2.483	0.63	8.550	1.26	14.617	1.45	20.68	0.58
2.500	0.63	8.567	1.26	14.633	1.45	20.70	0.58
2.517	0.63	8.583	1.26	14.650	1.45	20.72	0.58
2.533	0.63	8.600	1.26	14.667	1.45	20.73	0.58
2.550	0.63	8.617	1.26	14.683	1.45	20.75	0.58
2.567	0.63	8.633	1.26	14.700	1.45	20.77	0.58
2.583	0.63	8.650	1.26	14.717	1.45	20.78	0.58
2.600	0.63	8.667	1.26	14.733	1.45	20.80	0.58
2.617	0.63	8.683	1.26	14.750	1.45	20.82	0.58
2.633	0.63	8.700	1.26	14.767	1.45	20.83	0.58
2.650	0.63	8.717	1.26	14.783	1.45	20.85	0.58
2.667	0.63	8.733	1.26	14.800	1.45	20.87	0.58
2.683	0.63	8.750	1.26	14.817	1.45	20.88	0.58
2.700	0.63	8.767	1.36	14.833	1.45	20.90	0.58
2.717	0.63	8.783	1.36	14.850	1.45	20.92	0.58
2.733	0.63	8.800	1.36	14.867	1.45	20.93	0.58
2.750	0.63	8.817	1.36	14.883	1.45	20.95	0.58
2.767	0.63	8.833	1.36	14.900	1.45	20.97	0.58
2.783	0.63	8.850	1.36	14.917	1.45	20.98	0.58
2.800	0.63	8.867	1.36	14.933	1.45	21.00	0.58
2.817	0.63	8.883	1.36	14.950	1.45	21.02	0.58
2.833	0.63	8.900	1.36	14.967	1.45	21.03	0.58
2.850	0.63	8.917	1.36	14.983	1.45	21.05	0.58
2.867	0.63	8.933	1.36	15.000	1.45	21.07	0.58
2.883	0.63	8.950	1.36	15.017	1.45	21.08	0.58
2.900	0.63	8.967	1.36	15.033	1.45	21.10	0.58
2.917	0.63	8.983	1.36	15.050	1.45	21.12	0.58
2.933	0.63	9.000	1.36	15.067	1.45	21.13	0.58
2.950	0.63	9.017	1.36	15.083	1.45	21.15	0.58
2.967	0.63	9.033	1.36	15.100	1.45	21.17	0.58
2.983	0.63	9.050	1.36	15.117	1.45	21.18	0.58
3.000	0.63	9.067	1.36	15.133	1.45	21.20	0.58
3.017	0.63	9.083	1.36	15.150	1.45	21.22	0.58
3.033	0.63	9.100	1.36	15.167	1.45	21.23	0.58
3.050	0.63	9.117	1.36	15.183	1.45	21.25	0.58
3.067	0.63	9.133	1.36	15.200	1.45	21.27	0.58
3.083	0.63	9.150	1.36	15.217	1.45	21.28	0.58
3.100	0.63	9.167	1.36	15.233	1.45	21.30	0.58
3.117	0.63	9.183	1.36	15.250	1.45	21.32	0.58
3.133	0.63	9.200	1.36	15.267	1.45	21.33	0.58
3.150	0.63	9.217	1.36	15.283	1.45	21.35	0.58
3.167	0.63	9.233	1.36	15.300	1.45	21.37	0.58
3.183	0.63	9.250	1.36	15.317	1.45	21.38	0.58
3.200	0.63	9.267	1.55	15.333	1.45	21.40	0.58
3.217	0.63	9.283	1.55	15.350	1.45	21.42	0.58
3.233	0.63	9.300	1.55	15.367	1.45	21.43	0.58
3.250	0.63	9.317	1.55	15.383	1.45	21.45	0.58
3.267	0.63	9.333	1.55	15.400	1.45	21.47	0.58
3.283	0.63	9.350	1.55	15.417	1.45	21.48	0.58
3.300	0.63	9.367	1.55	15.433	1.45	21.50	0.58

3.317	0.63	9.383	1.55	15.450	1.45	21.52	0.58
3.333	0.63	9.400	1.55	15.467	1.45	21.53	0.58
3.350	0.63	9.417	1.55	15.483	1.45	21.55	0.58
3.367	0.63	9.433	1.55	15.500	1.45	21.57	0.58
3.383	0.63	9.450	1.55	15.517	1.45	21.58	0.58
3.400	0.63	9.467	1.55	15.533	1.45	21.60	0.58
3.417	0.63	9.483	1.55	15.550	1.45	21.62	0.58
3.433	0.63	9.500	1.55	15.567	1.45	21.63	0.58
3.450	0.63	9.517	1.55	15.583	1.45	21.65	0.58
3.467	0.63	9.533	1.55	15.600	1.45	21.67	0.58
3.483	0.63	9.550	1.55	15.617	1.45	21.68	0.58
3.500	0.63	9.567	1.55	15.633	1.45	21.70	0.58
3.517	0.63	9.583	1.55	15.650	1.45	21.72	0.58
3.533	0.63	9.600	1.55	15.667	1.45	21.73	0.58
3.550	0.63	9.617	1.55	15.683	1.45	21.75	0.58
3.567	0.63	9.633	1.55	15.700	1.45	21.77	0.58
3.583	0.63	9.650	1.55	15.717	1.45	21.78	0.58
3.600	0.63	9.667	1.55	15.733	1.45	21.80	0.58
3.617	0.63	9.683	1.55	15.750	1.45	21.82	0.58
3.633	0.63	9.700	1.55	15.767	1.45	21.83	0.58
3.650	0.63	9.717	1.55	15.783	1.45	21.85	0.58
3.667	0.63	9.733	1.55	15.800	1.45	21.87	0.58
3.683	0.63	9.750	1.55	15.817	1.45	21.88	0.58
3.700	0.63	9.767	1.74	15.833	1.45	21.90	0.58
3.717	0.63	9.783	1.74	15.850	1.45	21.92	0.58
3.733	0.63	9.800	1.74	15.867	1.45	21.93	0.58
3.750	0.63	9.817	1.74	15.883	1.45	21.95	0.58
3.767	0.63	9.833	1.74	15.900	1.45	21.97	0.58
3.783	0.63	9.850	1.74	15.917	1.45	21.98	0.58
3.800	0.63	9.867	1.74	15.933	1.45	22.00	0.58
3.817	0.63	9.883	1.74	15.950	1.45	22.02	0.58
3.833	0.63	9.900	1.74	15.967	1.45	22.03	0.58
3.850	0.63	9.917	1.74	15.983	1.45	22.05	0.58
3.867	0.63	9.933	1.74	16.000	1.45	22.07	0.58
3.883	0.63	9.950	1.74	16.017	1.45	22.08	0.58
3.900	0.63	9.967	1.74	16.033	1.45	22.10	0.58
3.917	0.63	9.983	1.74	16.050	1.45	22.12	0.58
3.933	0.63	10.000	1.74	16.067	1.45	22.13	0.58
3.950	0.63	10.017	1.74	16.083	1.45	22.15	0.58
3.967	0.63	10.033	1.74	16.100	1.45	22.17	0.58
3.983	0.63	10.050	1.74	16.117	1.45	22.18	0.58
4.000	0.63	10.067	1.74	16.133	1.45	22.20	0.58
4.017	0.63	10.083	1.74	16.150	1.45	22.22	0.58
4.033	0.63	10.100	1.74	16.167	1.45	22.23	0.58
4.050	0.63	10.117	1.74	16.183	1.45	22.25	0.58
4.067	0.63	10.133	1.74	16.200	1.45	22.27	0.58
4.083	0.63	10.150	1.74	16.217	1.45	22.28	0.58
4.100	0.63	10.167	1.74	16.233	1.45	22.30	0.58
4.117	0.63	10.183	1.74	16.250	1.45	22.32	0.58
4.133	0.63	10.200	1.74	16.267	0.88	22.33	0.58
4.150	0.63	10.217	1.74	16.283	0.87	22.35	0.58
4.167	0.63	10.233	1.74	16.300	0.87	22.37	0.58
4.183	0.63	10.250	1.75	16.317	0.87	22.38	0.58
4.200	0.63	10.267	2.23	16.333	0.87	22.40	0.58
4.217	0.63	10.283	2.23	16.350	0.87	22.42	0.58
4.233	0.63	10.300	2.23	16.367	0.87	22.43	0.58
4.250	0.63	10.317	2.23	16.383	0.87	22.45	0.58
4.267	0.78	10.333	2.23	16.400	0.87	22.47	0.58
4.283	0.78	10.350	2.23	16.417	0.87	22.48	0.58
4.300	0.78	10.367	2.23	16.433	0.87	22.50	0.58
4.317	0.78	10.383	2.23	16.450	0.87	22.52	0.58
4.333	0.78	10.400	2.23	16.467	0.87	22.53	0.58
4.350	0.78	10.417	2.23	16.483	0.87	22.55	0.58
4.367	0.78	10.433	2.23	16.500	0.87	22.57	0.58
4.383	0.78	10.450	2.23	16.517	0.87	22.58	0.58
4.400	0.78	10.467	2.23	16.533	0.87	22.60	0.58
4.417	0.78	10.483	2.23	16.550	0.87	22.62	0.58
4.433	0.78	10.500	2.23	16.567	0.87	22.63	0.58
4.450	0.78	10.517	2.23	16.583	0.87	22.65	0.58
4.467	0.78	10.533	2.23	16.600	0.87	22.67	0.58
4.483	0.78	10.550	2.23	16.617	0.87	22.68	0.58
4.500	0.78	10.567	2.23	16.633	0.87	22.70	0.58
4.517	0.78	10.583	2.23	16.650	0.87	22.72	0.58
4.533	0.78	10.600	2.23	16.667	0.87	22.73	0.58
4.550	0.78	10.617	2.23	16.683	0.87	22.75	0.58
4.567	0.78	10.633	2.23	16.700	0.87	22.77	0.58
4.583	0.78	10.650	2.23	16.717	0.87	22.78	0.58
4.600	0.78	10.667	2.23	16.733	0.87	22.80	0.58
4.617	0.78	10.683	2.23	16.750	0.87	22.82	0.58
4.633	0.78	10.700	2.23	16.767	0.87	22.83	0.58
4.650	0.78	10.717	2.23	16.783	0.87	22.85	0.58
4.667	0.78	10.733	2.23	16.800	0.87	22.87	0.58
4.683	0.78	10.750	2.23	16.817	0.87	22.88	0.58
4.700	0.78	10.767	3.01	16.833	0.87	22.90	0.58
4.717	0.78	10.783	3.01	16.850	0.87	22.92	0.58
4.733	0.78	10.800	3.01	16.867	0.87	22.93	0.58
4.750	0.78	10.817	3.01	16.883	0.87	22.95	0.58
4.767	0.78	10.833	3.01	16.900	0.87	22.97	0.58
4.783	0.78	10.850	3.01	16.917	0.87	22.98	0.58
4.800	0.78	10.867	3.01	16.933	0.87	23.00	0.58
4.817	0.78	10.883	3.01	16.950	0.87	23.02	0.58
4.833	0.78	10.900	3.01	16.967	0.87	23.03	0.58
4.850	0.78	10.917	3.01	16.983	0.87	23.05	0.58
4.867	0.78	10.933	3.01	17.000	0.87	23.07	0.58
4.883	0.78	10.950	3.01	17.017	0.87	23.08	0.58
4.900	0.78	10.967	3.01	17.033	0.87	23.10	0.58
4.917	0.78	10.983	3.01	17.050	0.87	23.12	0.58
4.933	0.78	11.000	3.01	17.067	0.87	23.13	0.58
4.950	0.78	11.017	3.01	17.083	0.87	23.15	0.58
4.967	0.78	11.033	3.01	17.100	0.87	23.17	0.58

4.983	0.78	11.050	3.01	17.117	0.87	23.18	0.58
5.000	0.78	11.067	3.01	17.133	0.87	23.20	0.58
5.017	0.78	11.083	3.01	17.150	0.87	23.22	0.58
5.033	0.78	11.100	3.01	17.167	0.87	23.23	0.58
5.050	0.78	11.117	3.01	17.183	0.87	23.25	0.58
5.067	0.78	11.133	3.01	17.200	0.87	23.27	0.58
5.083	0.78	11.150	3.01	17.217	0.87	23.28	0.58
5.100	0.78	11.167	3.01	17.233	0.87	23.30	0.58
5.117	0.78	11.183	3.01	17.250	0.87	23.32	0.58
5.133	0.78	11.200	3.01	17.267	0.87	23.33	0.58
5.150	0.78	11.217	3.01	17.283	0.87	23.35	0.58
5.167	0.78	11.233	3.01	17.300	0.87	23.37	0.58
5.183	0.78	11.250	3.01	17.317	0.87	23.38	0.58
5.200	0.78	11.267	4.65	17.333	0.87	23.40	0.58
5.217	0.78	11.283	4.65	17.350	0.87	23.42	0.58
5.233	0.78	11.300	4.65	17.367	0.87	23.43	0.58
5.250	0.78	11.317	4.65	17.383	0.87	23.45	0.58
5.267	0.78	11.333	4.65	17.400	0.87	23.47	0.58
5.283	0.78	11.350	4.65	17.417	0.87	23.48	0.58
5.300	0.78	11.367	4.65	17.433	0.87	23.50	0.58
5.317	0.78	11.383	4.65	17.450	0.87	23.52	0.58
5.333	0.78	11.400	4.65	17.467	0.87	23.53	0.58
5.350	0.78	11.417	4.65	17.483	0.87	23.55	0.58
5.367	0.78	11.433	4.65	17.500	0.87	23.57	0.58
5.383	0.78	11.450	4.65	17.517	0.87	23.58	0.58
5.400	0.78	11.467	4.65	17.533	0.87	23.60	0.58
5.417	0.78	11.483	4.65	17.550	0.87	23.62	0.58
5.433	0.78	11.500	4.65	17.567	0.87	23.63	0.58
5.450	0.78	11.517	4.65	17.583	0.87	23.65	0.58
5.467	0.78	11.533	4.65	17.600	0.87	23.67	0.58
5.483	0.78	11.550	4.65	17.617	0.87	23.68	0.58
5.500	0.78	11.567	4.65	17.633	0.87	23.70	0.58
5.517	0.78	11.583	4.65	17.650	0.87	23.72	0.58
5.533	0.78	11.600	4.65	17.667	0.87	23.73	0.58
5.550	0.78	11.617	4.65	17.683	0.87	23.75	0.58
5.567	0.78	11.633	4.65	17.700	0.87	23.77	0.58
5.583	0.78	11.650	4.65	17.717	0.87	23.78	0.58
5.600	0.78	11.667	4.65	17.733	0.87	23.80	0.58
5.617	0.78	11.683	4.65	17.750	0.87	23.82	0.58
5.633	0.78	11.700	4.65	17.767	0.87	23.83	0.58
5.650	0.78	11.717	4.65	17.783	0.87	23.85	0.58
5.667	0.78	11.733	4.65	17.800	0.87	23.87	0.58
5.683	0.78	11.750	4.65	17.817	0.87	23.88	0.58
5.700	0.78	11.767	14.34	17.833	0.87	23.90	0.58
5.717	0.78	11.783	14.35	17.850	0.87	23.92	0.58
5.733	0.78	11.800	14.35	17.867	0.87	23.93	0.58
5.750	0.78	11.817	14.35	17.883	0.87	23.95	0.58
5.767	0.78	11.833	14.35	17.900	0.87	23.97	0.58
5.783	0.78	11.850	14.35	17.917	0.87	23.98	0.58
5.800	0.78	11.867	14.35	17.933	0.87	24.00	0.58
5.817	0.78	11.883	14.35	17.950	0.87	24.02	0.58
5.833	0.78	11.900	14.35	17.967	0.87	24.03	0.58
5.850	0.78	11.917	14.35	17.983	0.87	24.05	0.58
5.867	0.78	11.933	14.35	18.000	0.87	24.07	0.58
5.883	0.78	11.950	14.35	18.017	0.87	24.08	0.58
5.900	0.78	11.967	14.35	18.033	0.87	24.10	0.58
5.917	0.78	11.983	14.35	18.050	0.87	24.12	0.58
5.933	0.78	12.000	14.35	18.067	0.87	24.13	0.58
5.950	0.78	12.017	59.30	18.083	0.87	24.15	0.58
5.967	0.78	12.033	59.33	18.100	0.87	24.17	0.58
5.983	0.78	12.050	59.33	18.117	0.87	24.18	0.58
6.000	0.78	12.067	59.33	18.133	0.87	24.20	0.58
6.017	0.78	12.083	59.33	18.150	0.87	24.22	0.58
6.033	0.78	12.100	59.33	18.167	0.87	24.23	0.58
6.050	0.78	12.117	59.33	18.183	0.87	24.25	0.58
6.067	0.78	12.133	59.33	18.200	0.87		

Max.Eff.Inten.(mm/hr)=	59.33	8.21	
over (min)	5.00	6.00	
Storage Coeff. (min)=	1.10 (ii)	5.93 (ii)	
Unit Hyd. Tpeak (min)=	5.00	6.00	
Unit Hyd. peak (cms)=	0.46	0.19	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	12.25	12.28	12.25
RUNOFF VOLUME (mm)=	46.47	5.73	24.66
TOTAL RAINFALL (mm)=	48.47	48.47	48.47
RUNOFF COEFFICIENT =	0.96	0.12	0.51

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. 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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** SIMULATION:08- 5yr-24hr-SCS **
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READ STORM	Filename: C:\Users\sthakkar\AppData\Local\Temp\3753745a-96ee-424b-bf39-441977d9a08f\007148d2
Ptotal= 66.01 mm	Comments: 5yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.19	12.50	9.51	18.75	1.19

0.25	0.73	6.50	1.19	12.75	4.88	19.00	1.19
0.50	0.73	6.75	1.19	13.00	4.88	19.25	1.19
0.75	0.73	7.00	1.19	13.25	3.56	19.50	1.19
1.00	0.73	7.25	1.45	13.50	3.56	19.75	1.19
1.25	0.73	7.50	1.45	13.75	2.77	20.00	1.19
1.50	0.73	7.75	1.45	14.00	2.77	20.25	0.79
1.75	0.73	8.00	1.45	14.25	1.98	20.50	0.79
2.00	0.73	8.25	1.72	14.50	1.98	20.75	0.79
2.25	0.86	8.50	1.72	14.75	1.98	21.00	0.79
2.50	0.86	8.75	1.85	15.00	1.98	21.25	0.79
2.75	0.86	9.00	1.85	15.25	1.98	21.50	0.79
3.00	0.86	9.25	2.11	15.50	1.98	21.75	0.79
3.25	0.86	9.50	2.11	15.75	1.98	22.00	0.79
3.50	0.86	9.75	2.38	16.00	1.98	22.25	0.79
3.75	0.86	10.00	2.38	16.25	1.19	22.50	0.79
4.00	0.86	10.25	3.04	16.50	1.19	22.75	0.79
4.25	1.06	10.50	3.04	16.75	1.19	23.00	0.79
4.50	1.06	10.75	4.09	17.00	1.19	23.25	0.79
4.75	1.06	11.00	4.09	17.25	1.19	23.50	0.79
5.00	1.06	11.25	6.34	17.50	1.19	23.75	0.79
5.25	1.06	11.50	6.34	17.75	1.19	24.00	0.79
5.50	1.06	11.75	19.54	18.00	1.19		
5.75	1.06	12.00	80.80	18.25	1.19		
6.00	1.06	12.25	9.51	18.50	1.19		

CALIB			
STANDHYD (0101)	Area (ha)= 0.09		
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.06	12.150	80.80	18.22	1.19
0.033	0.00	6.100	1.06	12.167	80.80	18.23	1.19
0.050	0.00	6.117	1.06	12.183	80.80	18.25	1.19
0.067	0.00	6.133	1.06	12.200	80.80	18.27	1.19
0.083	0.00	6.150	1.06	12.217	80.80	18.28	1.19
0.100	0.00	6.167	1.06	12.233	80.80	18.30	1.19
0.117	0.00	6.183	1.06	12.250	80.80	18.32	1.19
0.133	0.00	6.200	1.06	12.267	9.57	18.33	1.19
0.150	0.00	6.217	1.06	12.283	9.51	18.35	1.19
0.167	0.00	6.233	1.06	12.300	9.51	18.37	1.19
0.183	0.00	6.250	1.06	12.317	9.51	18.38	1.19
0.200	0.00	6.267	1.19	12.333	9.51	18.40	1.19
0.217	0.00	6.283	1.19	12.350	9.51	18.42	1.19
0.233	0.00	6.300	1.19	12.367	9.51	18.43	1.19
0.250	0.00	6.317	1.19	12.383	9.51	18.45	1.19
0.267	0.73	6.333	1.19	12.400	9.51	18.47	1.19
0.283	0.73	6.350	1.19	12.417	9.51	18.48	1.19
0.300	0.73	6.367	1.19	12.433	9.51	18.50	1.19
0.317	0.73	6.383	1.19	12.450	9.51	18.52	1.19
0.333	0.73	6.400	1.19	12.467	9.51	18.53	1.19
0.350	0.73	6.417	1.19	12.483	9.51	18.55	1.19
0.367	0.73	6.433	1.19	12.500	9.51	18.57	1.19
0.383	0.73	6.450	1.19	12.517	9.51	18.58	1.19
0.400	0.73	6.467	1.19	12.533	9.51	18.60	1.19
0.417	0.73	6.483	1.19	12.550	9.51	18.62	1.19
0.433	0.73	6.500	1.19	12.567	9.51	18.63	1.19
0.450	0.73	6.517	1.19	12.583	9.51	18.65	1.19
0.467	0.73	6.533	1.19	12.600	9.51	18.67	1.19
0.483	0.73	6.550	1.19	12.617	9.51	18.68	1.19
0.500	0.73	6.567	1.19	12.633	9.51	18.70	1.19
0.517	0.73	6.583	1.19	12.650	9.51	18.72	1.19
0.533	0.73	6.600	1.19	12.667	9.51	18.73	1.19
0.550	0.73	6.617	1.19	12.683	9.51	18.75	1.19
0.567	0.73	6.633	1.19	12.700	9.51	18.77	1.19
0.583	0.73	6.650	1.19	12.717	9.51	18.78	1.19
0.600	0.73	6.667	1.19	12.733	9.51	18.80	1.19
0.617	0.73	6.683	1.19	12.750	9.51	18.82	1.19
0.633	0.73	6.700	1.19	12.767	4.89	18.83	1.19
0.650	0.73	6.717	1.19	12.783	4.88	18.85	1.19
0.667	0.73	6.733	1.19	12.800	4.88	18.87	1.19
0.683	0.73	6.750	1.19	12.817	4.88	18.88	1.19
0.700	0.73	6.767	1.19	12.833	4.88	18.90	1.19
0.717	0.73	6.783	1.19	12.850	4.88	18.92	1.19
0.733	0.73	6.800	1.19	12.867	4.88	18.93	1.19
0.750	0.73	6.817	1.19	12.883	4.88	18.95	1.19
0.767	0.73	6.833	1.19	12.900	4.88	18.97	1.19
0.783	0.73	6.850	1.19	12.917	4.88	18.98	1.19
0.800	0.73	6.867	1.19	12.933	4.88	19.00	1.19
0.817	0.73	6.883	1.19	12.950	4.88	19.02	1.19
0.833	0.73	6.900	1.19	12.967	4.88	19.03	1.19
0.850	0.73	6.917	1.19	12.983	4.88	19.05	1.19
0.867	0.73	6.933	1.19	13.000	4.88	19.07	1.19
0.883	0.73	6.950	1.19	13.017	4.88	19.08	1.19
0.900	0.73	6.967	1.19	13.033	4.88	19.10	1.19
0.917	0.73	6.983	1.19	13.050	4.88	19.12	1.19

0.933	0.73	7.000	1.19	13.067	4.88	19.13	1.19
0.950	0.73	7.017	1.19	13.083	4.88	19.15	1.19
0.967	0.73	7.033	1.19	13.100	4.88	19.17	1.19
0.983	0.73	7.050	1.19	13.117	4.88	19.18	1.19
1.000	0.73	7.067	1.19	13.133	4.88	19.20	1.19
1.017	0.73	7.083	1.19	13.150	4.88	19.22	1.19
1.033	0.73	7.100	1.19	13.167	4.88	19.23	1.19
1.050	0.73	7.117	1.19	13.183	4.88	19.25	1.19
1.067	0.73	7.133	1.19	13.200	4.88	19.27	1.19
1.083	0.73	7.150	1.19	13.217	4.88	19.28	1.19
1.100	0.73	7.167	1.19	13.233	4.88	19.30	1.19
1.117	0.73	7.183	1.19	13.250	4.88	19.32	1.19
1.133	0.73	7.200	1.19	13.267	3.57	19.33	1.19
1.150	0.73	7.217	1.19	13.283	3.56	19.35	1.19
1.167	0.73	7.233	1.19	13.300	3.56	19.37	1.19
1.183	0.73	7.250	1.19	13.317	3.56	19.38	1.19
1.200	0.73	7.267	1.45	13.333	3.56	19.40	1.19
1.217	0.73	7.283	1.45	13.350	3.56	19.42	1.19
1.233	0.73	7.300	1.45	13.367	3.56	19.43	1.19
1.250	0.73	7.317	1.45	13.383	3.56	19.45	1.19
1.267	0.73	7.333	1.45	13.400	3.56	19.47	1.19
1.283	0.73	7.350	1.45	13.417	3.56	19.48	1.19
1.300	0.73	7.367	1.45	13.433	3.56	19.50	1.19
1.317	0.73	7.383	1.45	13.450	3.56	19.52	1.19
1.333	0.73	7.400	1.45	13.467	3.56	19.53	1.19
1.350	0.73	7.417	1.45	13.483	3.56	19.55	1.19
1.367	0.73	7.433	1.45	13.500	3.56	19.57	1.19
1.383	0.73	7.450	1.45	13.517	3.56	19.58	1.19
1.400	0.73	7.467	1.45	13.533	3.56	19.60	1.19
1.417	0.73	7.483	1.45	13.550	3.56	19.62	1.19
1.433	0.73	7.500	1.45	13.567	3.56	19.63	1.19
1.450	0.73	7.517	1.45	13.583	3.56	19.65	1.19
1.467	0.73	7.533	1.45	13.600	3.56	19.67	1.19
1.483	0.73	7.550	1.45	13.617	3.56	19.68	1.19
1.500	0.73	7.567	1.45	13.633	3.56	19.70	1.19
1.517	0.73	7.583	1.45	13.650	3.56	19.72	1.19
1.533	0.73	7.600	1.45	13.667	3.56	19.73	1.19
1.550	0.73	7.617	1.45	13.683	3.56	19.75	1.19
1.567	0.73	7.633	1.45	13.700	3.56	19.77	1.19
1.583	0.73	7.650	1.45	13.717	3.56	19.78	1.19
1.600	0.73	7.667	1.45	13.733	3.56	19.80	1.19
1.617	0.73	7.683	1.45	13.750	3.56	19.82	1.19
1.633	0.73	7.700	1.45	13.767	2.77	19.83	1.19
1.650	0.73	7.717	1.45	13.783	2.77	19.85	1.19
1.667	0.73	7.733	1.45	13.800	2.77	19.87	1.19
1.683	0.73	7.750	1.45	13.817	2.77	19.88	1.19
1.700	0.73	7.767	1.45	13.833	2.77	19.90	1.19
1.717	0.73	7.783	1.45	13.850	2.77	19.92	1.19
1.733	0.73	7.800	1.45	13.867	2.77	19.93	1.19
1.750	0.73	7.817	1.45	13.883	2.77	19.95	1.19
1.767	0.73	7.833	1.45	13.900	2.77	19.97	1.19
1.783	0.73	7.850	1.45	13.917	2.77	19.98	1.19
1.800	0.73	7.867	1.45	13.933	2.77	20.00	1.19
1.817	0.73	7.883	1.45	13.950	2.77	20.02	1.19
1.833	0.73	7.900	1.45	13.967	2.77	20.03	1.19
1.850	0.73	7.917	1.45	13.983	2.77	20.05	1.19
1.867	0.73	7.933	1.45	14.000	2.77	20.07	1.19
1.883	0.73	7.950	1.45	14.017	2.77	20.08	1.19
1.900	0.73	7.967	1.45	14.033	2.77	20.10	1.19
1.917	0.73	7.983	1.45	14.050	2.77	20.12	1.19
1.933	0.73	8.000	1.45	14.067	2.77	20.13	1.19
1.950	0.73	8.017	1.45	14.083	2.77	20.15	1.19
1.967	0.73	8.033	1.45	14.100	2.77	20.17	1.19
1.983	0.73	8.050	1.45	14.117	2.77	20.18	1.19
2.000	0.73	8.067	1.45	14.133	2.77	20.20	1.19
2.017	0.73	8.083	1.45	14.150	2.77	20.22	1.19
2.033	0.73	8.100	1.45	14.167	2.77	20.23	1.19
2.050	0.73	8.117	1.45	14.183	2.77	20.25	1.19
2.067	0.73	8.133	1.45	14.200	2.77	20.27	0.80
2.083	0.73	8.150	1.45	14.217	2.77	20.28	0.79
2.100	0.73	8.167	1.45	14.233	2.77	20.30	0.79
2.117	0.73	8.183	1.45	14.250	2.77	20.32	0.79
2.133	0.73	8.200	1.45	14.267	1.98	20.33	0.79
2.150	0.73	8.217	1.45	14.283	1.98	20.35	0.79
2.167	0.73	8.233	1.45	14.300	1.98	20.37	0.79
2.183	0.73	8.250	1.45	14.317	1.98	20.38	0.79
2.200	0.73	8.267	1.72	14.333	1.98	20.40	0.79
2.217	0.73	8.283	1.72	14.350	1.98	20.42	0.79
2.233	0.73	8.300	1.72	14.367	1.98	20.43	0.79
2.250	0.73	8.317	1.72	14.383	1.98	20.45	0.79
2.267	0.86	8.333	1.72	14.400	1.98	20.47	0.79
2.283	0.86	8.350	1.72	14.417	1.98	20.48	0.79
2.300	0.86	8.367	1.72	14.433	1.98	20.50	0.79
2.317	0.86	8.383	1.72	14.450	1.98	20.52	0.79
2.333	0.86	8.400	1.72	14.467	1.98	20.53	0.79
2.350	0.86	8.417	1.72	14.483	1.98	20.55	0.79
2.367	0.86	8.433	1.72	14.500	1.98	20.57	0.79
2.383	0.86	8.450	1.72	14.517	1.98	20.58	0.79
2.400	0.86	8.467	1.72	14.533	1.98	20.60	0.79
2.417	0.86	8.483	1.72	14.550	1.98	20.62	0.79
2.433	0.86	8.500	1.72	14.567	1.98	20.63	0.79
2.450	0.86	8.517	1.72	14.583	1.98	20.65	0.79
2.467	0.86	8.533	1.72	14.600	1.98	20.67	0.79
2.483	0.86	8.550	1.72	14.617	1.98	20.68	0.79
2.500	0.86	8.567	1.72	14.633	1.98	20.70	0.79
2.517	0.86	8.583	1.72	14.650	1.98	20.72	0.79
2.533	0.86	8.600	1.72	14.667	1.98	20.73	0.79
2.550	0.86	8.617	1.72	14.683	1.98	20.75	0.79
2.567	0.86	8.633	1.72	14.700	1.98	20.77	0.79
2.583	0.86	8.650	1.72	14.717	1.98	20.78	0.79

2.600	0.86	8.667	1.72	14.733	1.98	20.80	0.79
2.617	0.86	8.683	1.72	14.750	1.98	20.82	0.79
2.633	0.86	8.700	1.72	14.767	1.98	20.83	0.79
2.650	0.86	8.717	1.72	14.783	1.98	20.85	0.79
2.667	0.86	8.733	1.72	14.800	1.98	20.87	0.79
2.683	0.86	8.750	1.72	14.817	1.98	20.88	0.79
2.700	0.86	8.767	1.85	14.833	1.98	20.90	0.79
2.717	0.86	8.783	1.85	14.850	1.98	20.92	0.79
2.733	0.86	8.800	1.85	14.867	1.98	20.93	0.79
2.750	0.86	8.817	1.85	14.883	1.98	20.95	0.79
2.767	0.86	8.833	1.85	14.900	1.98	20.97	0.79
2.783	0.86	8.850	1.85	14.917	1.98	20.98	0.79
2.800	0.86	8.867	1.85	14.933	1.98	21.00	0.79
2.817	0.86	8.883	1.85	14.950	1.98	21.02	0.79
2.833	0.86	8.900	1.85	14.967	1.98	21.03	0.79
2.850	0.86	8.917	1.85	14.983	1.98	21.05	0.79
2.867	0.86	8.933	1.85	15.000	1.98	21.07	0.79
2.883	0.86	8.950	1.85	15.017	1.98	21.08	0.79
2.900	0.86	8.967	1.85	15.033	1.98	21.10	0.79
2.917	0.86	8.983	1.85	15.050	1.98	21.12	0.79
2.933	0.86	9.000	1.85	15.067	1.98	21.13	0.79
2.950	0.86	9.017	1.85	15.083	1.98	21.15	0.79
2.967	0.86	9.033	1.85	15.100	1.98	21.17	0.79
2.983	0.86	9.050	1.85	15.117	1.98	21.18	0.79
3.000	0.86	9.067	1.85	15.133	1.98	21.20	0.79
3.017	0.86	9.083	1.85	15.150	1.98	21.22	0.79
3.033	0.86	9.100	1.85	15.167	1.98	21.23	0.79
3.050	0.86	9.117	1.85	15.183	1.98	21.25	0.79
3.067	0.86	9.133	1.85	15.200	1.98	21.27	0.79
3.083	0.86	9.150	1.85	15.217	1.98	21.28	0.79
3.100	0.86	9.167	1.85	15.233	1.98	21.30	0.79
3.117	0.86	9.183	1.85	15.250	1.98	21.32	0.79
3.133	0.86	9.200	1.85	15.267	1.98	21.33	0.79
3.150	0.86	9.217	1.85	15.283	1.98	21.35	0.79
3.167	0.86	9.233	1.85	15.300	1.98	21.37	0.79
3.183	0.86	9.250	1.85	15.317	1.98	21.38	0.79
3.200	0.86	9.267	2.11	15.333	1.98	21.40	0.79
3.217	0.86	9.283	2.11	15.350	1.98	21.42	0.79
3.233	0.86	9.300	2.11	15.367	1.98	21.43	0.79
3.250	0.86	9.317	2.11	15.383	1.98	21.45	0.79
3.267	0.86	9.333	2.11	15.400	1.98	21.47	0.79
3.283	0.86	9.350	2.11	15.417	1.98	21.48	0.79
3.300	0.86	9.367	2.11	15.433	1.98	21.50	0.79
3.317	0.86	9.383	2.11	15.450	1.98	21.52	0.79
3.333	0.86	9.400	2.11	15.467	1.98	21.53	0.79
3.350	0.86	9.417	2.11	15.483	1.98	21.55	0.79
3.367	0.86	9.433	2.11	15.500	1.98	21.57	0.79
3.383	0.86	9.450	2.11	15.517	1.98	21.58	0.79
3.400	0.86	9.467	2.11	15.533	1.98	21.60	0.79
3.417	0.86	9.483	2.11	15.550	1.98	21.62	0.79
3.433	0.86	9.500	2.11	15.567	1.98	21.63	0.79
3.450	0.86	9.517	2.11	15.583	1.98	21.65	0.79
3.467	0.86	9.533	2.11	15.600	1.98	21.67	0.79
3.483	0.86	9.550	2.11	15.617	1.98	21.68	0.79
3.500	0.86	9.567	2.11	15.633	1.98	21.70	0.79
3.517	0.86	9.583	2.11	15.650	1.98	21.72	0.79
3.533	0.86	9.600	2.11	15.667	1.98	21.73	0.79
3.550	0.86	9.617	2.11	15.683	1.98	21.75	0.79
3.567	0.86	9.633	2.11	15.700	1.98	21.77	0.79
3.583	0.86	9.650	2.11	15.717	1.98	21.78	0.79
3.600	0.86	9.667	2.11	15.733	1.98	21.80	0.79
3.617	0.86	9.683	2.11	15.750	1.98	21.82	0.79
3.633	0.86	9.700	2.11	15.767	1.98	21.83	0.79
3.650	0.86	9.717	2.11	15.783	1.98	21.85	0.79
3.667	0.86	9.733	2.11	15.800	1.98	21.87	0.79
3.683	0.86	9.750	2.11	15.817	1.98	21.88	0.79
3.700	0.86	9.767	2.38	15.833	1.98	21.90	0.79
3.717	0.86	9.783	2.38	15.850	1.98	21.92	0.79
3.733	0.86	9.800	2.38	15.867	1.98	21.93	0.79
3.750	0.86	9.817	2.38	15.883	1.98	21.95	0.79
3.767	0.86	9.833	2.38	15.900	1.98	21.97	0.79
3.783	0.86	9.850	2.38	15.917	1.98	21.98	0.79
3.800	0.86	9.867	2.38	15.933	1.98	22.00	0.79
3.817	0.86	9.883	2.38	15.950	1.98	22.02	0.79
3.833	0.86	9.900	2.38	15.967	1.98	22.03	0.79
3.850	0.86	9.917	2.38	15.983	1.98	22.05	0.79
3.867	0.86	9.933	2.38	16.000	1.98	22.07	0.79
3.883	0.86	9.950	2.38	16.017	1.98	22.08	0.79
3.900	0.86	9.967	2.38	16.033	1.98	22.10	0.79
3.917	0.86	9.983	2.38	16.050	1.98	22.12	0.79
3.933	0.86	10.000	2.38	16.067	1.98	22.13	0.79
3.950	0.86	10.017	2.38	16.083	1.98	22.15	0.79
3.967	0.86	10.033	2.38	16.100	1.98	22.17	0.79
3.983	0.86	10.050	2.38	16.117	1.98	22.18	0.79
4.000	0.86	10.067	2.38	16.133	1.98	22.20	0.79
4.017	0.86	10.083	2.38	16.150	1.98	22.22	0.79
4.033	0.86	10.100	2.38	16.167	1.98	22.23	0.79
4.050	0.86	10.117	2.38	16.183	1.98	22.25	0.79
4.067	0.86	10.133	2.38	16.200	1.98	22.27	0.79
4.083	0.86	10.150	2.38	16.217	1.98	22.28	0.79
4.100	0.86	10.167	2.38	16.233	1.98	22.30	0.79
4.117	0.86	10.183	2.38	16.250	1.98	22.32	0.79
4.133	0.86	10.200	2.38	16.267	1.19	22.33	0.79
4.150	0.86	10.217	2.38	16.283	1.19	22.35	0.79
4.167	0.86	10.233	2.38	16.300	1.19	22.37	0.79
4.183	0.86	10.250	2.38	16.317	1.19	22.38	0.79
4.200	0.86	10.267	3.04	16.333	1.19	22.40	0.79
4.217	0.86	10.283	3.04	16.350	1.19	22.42	0.79
4.233	0.86	10.300	3.04	16.367	1.19	22.43	0.79
4.250	0.86	10.317	3.04	16.383	1.19	22.45	0.79

4.267	1.06	10.333	3.04	16.400	1.19	22.47	0.79
4.283	1.06	10.350	3.04	16.417	1.19	22.48	0.79
4.300	1.06	10.367	3.04	16.433	1.19	22.50	0.79
4.317	1.06	10.383	3.04	16.450	1.19	22.52	0.79
4.333	1.06	10.400	3.04	16.467	1.19	22.53	0.79
4.350	1.06	10.417	3.04	16.483	1.19	22.55	0.79
4.367	1.06	10.433	3.04	16.500	1.19	22.57	0.79
4.383	1.06	10.450	3.04	16.517	1.19	22.58	0.79
4.400	1.06	10.467	3.04	16.533	1.19	22.60	0.79
4.417	1.06	10.483	3.04	16.550	1.19	22.62	0.79
4.433	1.06	10.500	3.04	16.567	1.19	22.63	0.79
4.450	1.06	10.517	3.04	16.583	1.19	22.65	0.79
4.467	1.06	10.533	3.04	16.600	1.19	22.67	0.79
4.483	1.06	10.550	3.04	16.617	1.19	22.68	0.79
4.500	1.06	10.567	3.04	16.633	1.19	22.70	0.79
4.517	1.06	10.583	3.04	16.650	1.19	22.72	0.79
4.533	1.06	10.600	3.04	16.667	1.19	22.73	0.79
4.550	1.06	10.617	3.04	16.683	1.19	22.75	0.79
4.567	1.06	10.633	3.04	16.700	1.19	22.77	0.79
4.583	1.06	10.650	3.04	16.717	1.19	22.78	0.79
4.600	1.06	10.667	3.04	16.733	1.19	22.80	0.79
4.617	1.06	10.683	3.04	16.750	1.19	22.82	0.79
4.633	1.06	10.700	3.04	16.767	1.19	22.83	0.79
4.650	1.06	10.717	3.04	16.783	1.19	22.85	0.79
4.667	1.06	10.733	3.04	16.800	1.19	22.87	0.79
4.683	1.06	10.750	3.04	16.817	1.19	22.88	0.79
4.700	1.06	10.767	4.09	16.833	1.19	22.90	0.79
4.717	1.06	10.783	4.09	16.850	1.19	22.92	0.79
4.733	1.06	10.800	4.09	16.867	1.19	22.93	0.79
4.750	1.06	10.817	4.09	16.883	1.19	22.95	0.79
4.767	1.06	10.833	4.09	16.900	1.19	22.97	0.79
4.783	1.06	10.850	4.09	16.917	1.19	22.98	0.79
4.800	1.06	10.867	4.09	16.933	1.19	23.00	0.79
4.817	1.06	10.883	4.09	16.950	1.19	23.02	0.79
4.833	1.06	10.900	4.09	16.967	1.19	23.03	0.79
4.850	1.06	10.917	4.09	16.983	1.19	23.05	0.79
4.867	1.06	10.933	4.09	17.000	1.19	23.07	0.79
4.883	1.06	10.950	4.09	17.017	1.19	23.08	0.79
4.900	1.06	10.967	4.09	17.033	1.19	23.10	0.79
4.917	1.06	10.983	4.09	17.050	1.19	23.12	0.79
4.933	1.06	11.000	4.09	17.067	1.19	23.13	0.79
4.950	1.06	11.017	4.09	17.083	1.19	23.15	0.79
4.967	1.06	11.033	4.09	17.100	1.19	23.17	0.79
4.983	1.06	11.050	4.09	17.117	1.19	23.18	0.79
5.000	1.06	11.067	4.09	17.133	1.19	23.20	0.79
5.017	1.06	11.083	4.09	17.150	1.19	23.22	0.79
5.033	1.06	11.100	4.09	17.167	1.19	23.23	0.79
5.050	1.06	11.117	4.09	17.183	1.19	23.25	0.79
5.067	1.06	11.133	4.09	17.200	1.19	23.27	0.79
5.083	1.06	11.150	4.09	17.217	1.19	23.28	0.79
5.100	1.06	11.167	4.09	17.233	1.19	23.30	0.79
5.117	1.06	11.183	4.09	17.250	1.19	23.32	0.79
5.133	1.06	11.200	4.09	17.267	1.19	23.33	0.79
5.150	1.06	11.217	4.09	17.283	1.19	23.35	0.79
5.167	1.06	11.233	4.09	17.300	1.19	23.37	0.79
5.183	1.06	11.250	4.09	17.317	1.19	23.38	0.79
5.200	1.06	11.267	6.34	17.333	1.19	23.40	0.79
5.217	1.06	11.283	6.34	17.350	1.19	23.42	0.79
5.233	1.06	11.300	6.34	17.367	1.19	23.43	0.79
5.250	1.06	11.317	6.34	17.383	1.19	23.45	0.79
5.267	1.06	11.333	6.34	17.400	1.19	23.47	0.79
5.283	1.06	11.350	6.34	17.417	1.19	23.48	0.79
5.300	1.06	11.367	6.34	17.433	1.19	23.50	0.79
5.317	1.06	11.383	6.34	17.450	1.19	23.52	0.79
5.333	1.06	11.400	6.34	17.467	1.19	23.53	0.79
5.350	1.06	11.417	6.34	17.483	1.19	23.55	0.79
5.367	1.06	11.433	6.34	17.500	1.19	23.57	0.79
5.383	1.06	11.450	6.34	17.517	1.19	23.58	0.79
5.400	1.06	11.467	6.34	17.533	1.19	23.60	0.79
5.417	1.06	11.483	6.34	17.550	1.19	23.62	0.79
5.433	1.06	11.500	6.34	17.567	1.19	23.63	0.79
5.450	1.06	11.517	6.34	17.583	1.19	23.65	0.79
5.467	1.06	11.533	6.34	17.600	1.19	23.67	0.79
5.483	1.06	11.550	6.34	17.617	1.19	23.68	0.79
5.500	1.06	11.567	6.34	17.633	1.19	23.70	0.79
5.517	1.06	11.583	6.34	17.650	1.19	23.72	0.79
5.533	1.06	11.600	6.34	17.667	1.19	23.73	0.79
5.550	1.06	11.617	6.34	17.683	1.19	23.75	0.79
5.567	1.06	11.633	6.34	17.700	1.19	23.77	0.79
5.583	1.06	11.650	6.34	17.717	1.19	23.78	0.79
5.600	1.06	11.667	6.34	17.733	1.19	23.80	0.79
5.617	1.06	11.683	6.34	17.750	1.19	23.82	0.79
5.633	1.06	11.700	6.34	17.767	1.19	23.83	0.79
5.650	1.06	11.717	6.34	17.783	1.19	23.85	0.79
5.667	1.06	11.733	6.34	17.800	1.19	23.87	0.79
5.683	1.06	11.750	6.34	17.817	1.19	23.88	0.79
5.700	1.06	11.767	19.53	17.833	1.19	23.90	0.79
5.717	1.06	11.783	19.54	17.850	1.19	23.92	0.79
5.733	1.06	11.800	19.54	17.867	1.19	23.93	0.79
5.750	1.06	11.817	19.54	17.883	1.19	23.95	0.79
5.767	1.06	11.833	19.54	17.900	1.19	23.97	0.79
5.783	1.06	11.850	19.54	17.917	1.19	23.98	0.79
5.800	1.06	11.867	19.54	17.933	1.19	24.00	0.79
5.817	1.06	11.883	19.54	17.950	1.19	24.02	0.79
5.833	1.06	11.900	19.54	17.967	1.19	24.03	0.79
5.850	1.06	11.917	19.54	17.983	1.19	24.05	0.79
5.867	1.06	11.933	19.54	18.000	1.19	24.07	0.79
5.883	1.06	11.950	19.54	18.017	1.19	24.08	0.79
5.900	1.06	11.967	19.54	18.033	1.19	24.10	0.79
5.917	1.06	11.983	19.54	18.050	1.19	24.12	0.79

5.933	1.06	12.000	19.54	18.067	1.19	24.13	0.79
5.950	1.06	12.017	80.75	18.083	1.19	24.15	0.79
5.967	1.06	12.033	80.80	18.100	1.19	24.17	0.79
5.983	1.06	12.050	80.80	18.117	1.19	24.18	0.79
6.000	1.06	12.067	80.80	18.133	1.19	24.20	0.79
6.017	1.06	12.083	80.80	18.150	1.19	24.22	0.79
6.033	1.06	12.100	80.80	18.167	1.19	24.23	0.79
6.050	1.06	12.117	80.80	18.183	1.19	24.25	0.79
6.067	1.06	12.133	80.80	18.200	1.19		

			TOTALS
Max.Eff.Inten.(mm/hr)=	80.80	15.41	
over (min)	5.00	6.00	
Storage Coeff. (min)=	0.97 (ii)	5.24 (ii)	
Unit Hyd. Tpeak (min)=	5.00	6.00	
Unit Hyd. peak (cms)=	0.48	0.21	
PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	12.23	12.27	12.25
RUNOFF VOLUME (mm)=	64.01	10.71	37.34
TOTAL RAINFALL (mm)=	66.01	66.01	66.01
RUNOFF COEFFICIENT =	0.97	0.16	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. 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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** SIMULATION:09- 10yr-24hr-SCS **
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READ STORM | Filename: C:\Users\sthakkar\AppData\Local\Temp\3753745a-96ee-424b-bf39-441977d9a08f\6ee63352
Ptotal= 72.21 mm | Comments: 10yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.30	12.50	10.40	18.75	1.30
0.25	0.79	6.50	1.30	12.75	5.34	19.00	1.30
0.50	0.79	6.75	1.30	13.00	5.34	19.25	1.30
0.75	0.79	7.00	1.30	13.25	3.90	19.50	1.30
1.00	0.79	7.25	1.59	13.50	3.90	19.75	1.30
1.25	0.79	7.50	1.59	13.75	3.03	20.00	1.30
1.50	0.79	7.75	1.59	14.00	3.03	20.25	0.87
1.75	0.79	8.00	1.59	14.25	2.17	20.50	0.87
2.00	0.79	8.25	1.88	14.50	2.17	20.75	0.87
2.25	0.94	8.50	1.88	14.75	2.17	21.00	0.87
2.50	0.94	8.75	2.02	15.00	2.17	21.25	0.87
2.75	0.94	9.00	2.02	15.25	2.17	21.50	0.87
3.00	0.94	9.25	2.31	15.50	2.17	21.75	0.87
3.25	0.94	9.50	2.31	15.75	2.17	22.00	0.87
3.50	0.94	9.75	2.60	16.00	2.17	22.25	0.87
3.75	0.94	10.00	2.60	16.25	1.30	22.50	0.87
4.00	0.94	10.25	3.32	16.50	1.30	22.75	0.87
4.25	1.16	10.50	3.32	16.75	1.30	23.00	0.87
4.50	1.16	10.75	4.48	17.00	1.30	23.25	0.87
4.75	1.16	11.00	4.48	17.25	1.30	23.50	0.87
5.00	1.16	11.25	6.93	17.50	1.30	23.75	0.87
5.25	1.16	11.50	6.93	17.75	1.30	24.00	0.87
5.50	1.16	11.75	21.37	18.00	1.30		
5.75	1.16	12.00	88.39	18.25	1.30		
6.00	1.16	12.25	10.40	18.50	1.30		

CALIB | STANDHYD (0101) | ID= 1 DT= 1.0 min | Area (ha)= 0.09 | Total Imp(%)= 50.00 | Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.16	12.150	88.39	18.22	1.30
0.033	0.00	6.100	1.16	12.167	88.39	18.23	1.30
0.050	0.00	6.117	1.16	12.183	88.39	18.25	1.30
0.067	0.00	6.133	1.16	12.200	88.39	18.27	1.30
0.083	0.00	6.150	1.16	12.217	88.39	18.28	1.30
0.100	0.00	6.167	1.16	12.233	88.39	18.30	1.30
0.117	0.00	6.183	1.16	12.250	88.39	18.32	1.30
0.133	0.00	6.200	1.16	12.267	10.47	18.33	1.30
0.150	0.00	6.217	1.16	12.283	10.40	18.35	1.30
0.167	0.00	6.233	1.16	12.300	10.40	18.37	1.30
0.183	0.00	6.250	1.16	12.317	10.40	18.38	1.30

0.200	0.00	6.267	1.30	12.333	10.40	18.40	1.30
0.217	0.00	6.283	1.30	12.350	10.40	18.42	1.30
0.233	0.00	6.300	1.30	12.367	10.40	18.43	1.30
0.250	0.00	6.317	1.30	12.383	10.40	18.45	1.30
0.267	0.79	6.333	1.30	12.400	10.40	18.47	1.30
0.283	0.79	6.350	1.30	12.417	10.40	18.48	1.30
0.300	0.79	6.367	1.30	12.433	10.40	18.50	1.30
0.317	0.79	6.383	1.30	12.450	10.40	18.52	1.30
0.333	0.79	6.400	1.30	12.467	10.40	18.53	1.30
0.350	0.79	6.417	1.30	12.483	10.40	18.55	1.30
0.367	0.79	6.433	1.30	12.500	10.40	18.57	1.30
0.383	0.79	6.450	1.30	12.517	10.40	18.58	1.30
0.400	0.79	6.467	1.30	12.533	10.40	18.60	1.30
0.417	0.79	6.483	1.30	12.550	10.40	18.62	1.30
0.433	0.79	6.500	1.30	12.567	10.40	18.63	1.30
0.450	0.79	6.517	1.30	12.583	10.40	18.65	1.30
0.467	0.79	6.533	1.30	12.600	10.40	18.67	1.30
0.483	0.79	6.550	1.30	12.617	10.40	18.68	1.30
0.500	0.79	6.567	1.30	12.633	10.40	18.70	1.30
0.517	0.79	6.583	1.30	12.650	10.40	18.72	1.30
0.533	0.79	6.600	1.30	12.667	10.40	18.73	1.30
0.550	0.79	6.617	1.30	12.683	10.40	18.75	1.30
0.567	0.79	6.633	1.30	12.700	10.40	18.77	1.30
0.583	0.79	6.650	1.30	12.717	10.40	18.78	1.30
0.600	0.79	6.667	1.30	12.733	10.40	18.80	1.30
0.617	0.79	6.683	1.30	12.750	10.40	18.82	1.30
0.633	0.79	6.700	1.30	12.767	5.35	18.83	1.30
0.650	0.79	6.717	1.30	12.783	5.34	18.85	1.30
0.667	0.79	6.733	1.30	12.800	5.34	18.87	1.30
0.683	0.79	6.750	1.30	12.817	5.34	18.88	1.30
0.700	0.79	6.767	1.30	12.833	5.34	18.90	1.30
0.717	0.79	6.783	1.30	12.850	5.34	18.92	1.30
0.733	0.79	6.800	1.30	12.867	5.34	18.93	1.30
0.750	0.79	6.817	1.30	12.883	5.34	18.95	1.30
0.767	0.79	6.833	1.30	12.900	5.34	18.97	1.30
0.783	0.79	6.850	1.30	12.917	5.34	18.98	1.30
0.800	0.79	6.867	1.30	12.933	5.34	19.00	1.30
0.817	0.79	6.883	1.30	12.950	5.34	19.02	1.30
0.833	0.79	6.900	1.30	12.967	5.34	19.03	1.30
0.850	0.79	6.917	1.30	12.983	5.34	19.05	1.30
0.867	0.79	6.933	1.30	13.000	5.34	19.07	1.30
0.883	0.79	6.950	1.30	13.017	5.34	19.08	1.30
0.900	0.79	6.967	1.30	13.033	5.34	19.10	1.30
0.917	0.79	6.983	1.30	13.050	5.34	19.12	1.30
0.933	0.79	7.000	1.30	13.067	5.34	19.13	1.30
0.950	0.79	7.017	1.30	13.083	5.34	19.15	1.30
0.967	0.79	7.033	1.30	13.100	5.34	19.17	1.30
0.983	0.79	7.050	1.30	13.117	5.34	19.18	1.30
1.000	0.79	7.067	1.30	13.133	5.34	19.20	1.30
1.017	0.79	7.083	1.30	13.150	5.34	19.22	1.30
1.033	0.79	7.100	1.30	13.167	5.34	19.23	1.30
1.050	0.79	7.117	1.30	13.183	5.34	19.25	1.30
1.067	0.79	7.133	1.30	13.200	5.34	19.27	1.30
1.083	0.79	7.150	1.30	13.217	5.34	19.28	1.30
1.100	0.79	7.167	1.30	13.233	5.34	19.30	1.30
1.117	0.79	7.183	1.30	13.250	5.34	19.32	1.30
1.133	0.79	7.200	1.30	13.267	3.90	19.33	1.30
1.150	0.79	7.217	1.30	13.283	3.90	19.35	1.30
1.167	0.79	7.233	1.30	13.300	3.90	19.37	1.30
1.183	0.79	7.250	1.30	13.317	3.90	19.38	1.30
1.200	0.79	7.267	1.59	13.333	3.90	19.40	1.30
1.217	0.79	7.283	1.59	13.350	3.90	19.42	1.30
1.233	0.79	7.300	1.59	13.367	3.90	19.43	1.30
1.250	0.79	7.317	1.59	13.383	3.90	19.45	1.30
1.267	0.79	7.333	1.59	13.400	3.90	19.47	1.30
1.283	0.79	7.350	1.59	13.417	3.90	19.48	1.30
1.300	0.79	7.367	1.59	13.433	3.90	19.50	1.30
1.317	0.79	7.383	1.59	13.450	3.90	19.52	1.30
1.333	0.79	7.400	1.59	13.467	3.90	19.53	1.30
1.350	0.79	7.417	1.59	13.483	3.90	19.55	1.30
1.367	0.79	7.433	1.59	13.500	3.90	19.57	1.30
1.383	0.79	7.450	1.59	13.517	3.90	19.58	1.30
1.400	0.79	7.467	1.59	13.533	3.90	19.60	1.30
1.417	0.79	7.483	1.59	13.550	3.90	19.62	1.30
1.433	0.79	7.500	1.59	13.567	3.90	19.63	1.30
1.450	0.79	7.517	1.59	13.583	3.90	19.65	1.30
1.467	0.79	7.533	1.59	13.600	3.90	19.67	1.30
1.483	0.79	7.550	1.59	13.617	3.90	19.68	1.30
1.500	0.79	7.567	1.59	13.633	3.90	19.70	1.30
1.517	0.79	7.583	1.59	13.650	3.90	19.72	1.30
1.533	0.79	7.600	1.59	13.667	3.90	19.73	1.30
1.550	0.79	7.617	1.59	13.683	3.90	19.75	1.30
1.567	0.79	7.633	1.59	13.700	3.90	19.77	1.30
1.583	0.79	7.650	1.59	13.717	3.90	19.78	1.30
1.600	0.79	7.667	1.59	13.733	3.90	19.80	1.30
1.617	0.79	7.683	1.59	13.750	3.90	19.82	1.30
1.633	0.79	7.700	1.59	13.767	3.03	19.83	1.30
1.650	0.79	7.717	1.59	13.783	3.03	19.85	1.30
1.667	0.79	7.733	1.59	13.800	3.03	19.87	1.30
1.683	0.79	7.750	1.59	13.817	3.03	19.88	1.30
1.700	0.79	7.767	1.59	13.833	3.03	19.90	1.30
1.717	0.79	7.783	1.59	13.850	3.03	19.92	1.30
1.733	0.79	7.800	1.59	13.867	3.03	19.93	1.30
1.750	0.79	7.817	1.59	13.883	3.03	19.95	1.30
1.767	0.79	7.833	1.59	13.900	3.03	19.97	1.30
1.783	0.79	7.850	1.59	13.917	3.03	19.98	1.30
1.800	0.79	7.867	1.59	13.933	3.03	20.00	1.30
1.817	0.79	7.883	1.59	13.950	3.03	20.02	1.30
1.833	0.79	7.900	1.59	13.967	3.03	20.03	1.30
1.850	0.79	7.917	1.59	13.983	3.03	20.05	1.30

1.867	0.79	7.933	1.59	14.000	3.03	20.07	1.30
1.883	0.79	7.950	1.59	14.017	3.03	20.08	1.30
1.900	0.79	7.967	1.59	14.033	3.03	20.10	1.30
1.917	0.79	7.983	1.59	14.050	3.03	20.12	1.30
1.933	0.79	8.000	1.59	14.067	3.03	20.13	1.30
1.950	0.79	8.017	1.59	14.083	3.03	20.15	1.30
1.967	0.79	8.033	1.59	14.100	3.03	20.17	1.30
1.983	0.79	8.050	1.59	14.117	3.03	20.18	1.30
2.000	0.79	8.067	1.59	14.133	3.03	20.20	1.30
2.017	0.79	8.083	1.59	14.150	3.03	20.22	1.30
2.033	0.79	8.100	1.59	14.167	3.03	20.23	1.30
2.050	0.79	8.117	1.59	14.183	3.03	20.25	1.30
2.067	0.79	8.133	1.59	14.200	3.03	20.27	0.87
2.083	0.79	8.150	1.59	14.217	3.03	20.28	0.87
2.100	0.79	8.167	1.59	14.233	3.03	20.30	0.87
2.117	0.79	8.183	1.59	14.250	3.03	20.32	0.87
2.133	0.79	8.200	1.59	14.267	2.17	20.33	0.87
2.150	0.79	8.217	1.59	14.283	2.17	20.35	0.87
2.167	0.79	8.233	1.59	14.300	2.17	20.37	0.87
2.183	0.79	8.250	1.59	14.317	2.17	20.38	0.87
2.200	0.79	8.267	1.88	14.333	2.17	20.40	0.87
2.217	0.79	8.283	1.88	14.350	2.17	20.42	0.87
2.233	0.79	8.300	1.88	14.367	2.17	20.43	0.87
2.250	0.79	8.317	1.88	14.383	2.17	20.45	0.87
2.267	0.94	8.333	1.88	14.400	2.17	20.47	0.87
2.283	0.94	8.350	1.88	14.417	2.17	20.48	0.87
2.300	0.94	8.367	1.88	14.433	2.17	20.50	0.87
2.317	0.94	8.383	1.88	14.450	2.17	20.52	0.87
2.333	0.94	8.400	1.88	14.467	2.17	20.53	0.87
2.350	0.94	8.417	1.88	14.483	2.17	20.55	0.87
2.367	0.94	8.433	1.88	14.500	2.17	20.57	0.87
2.383	0.94	8.450	1.88	14.517	2.17	20.58	0.87
2.400	0.94	8.467	1.88	14.533	2.17	20.60	0.87
2.417	0.94	8.483	1.88	14.550	2.17	20.62	0.87
2.433	0.94	8.500	1.88	14.567	2.17	20.63	0.87
2.450	0.94	8.517	1.88	14.583	2.17	20.65	0.87
2.467	0.94	8.533	1.88	14.600	2.17	20.67	0.87
2.483	0.94	8.550	1.88	14.617	2.17	20.68	0.87
2.500	0.94	8.567	1.88	14.633	2.17	20.70	0.87
2.517	0.94	8.583	1.88	14.650	2.17	20.72	0.87
2.533	0.94	8.600	1.88	14.667	2.17	20.73	0.87
2.550	0.94	8.617	1.88	14.683	2.17	20.75	0.87
2.567	0.94	8.633	1.88	14.700	2.17	20.77	0.87
2.583	0.94	8.650	1.88	14.717	2.17	20.78	0.87
2.600	0.94	8.667	1.88	14.733	2.17	20.80	0.87
2.617	0.94	8.683	1.88	14.750	2.17	20.82	0.87
2.633	0.94	8.700	1.88	14.767	2.17	20.83	0.87
2.650	0.94	8.717	1.88	14.783	2.17	20.85	0.87
2.667	0.94	8.733	1.88	14.800	2.17	20.87	0.87
2.683	0.94	8.750	1.88	14.817	2.17	20.88	0.87
2.700	0.94	8.767	2.02	14.833	2.17	20.90	0.87
2.717	0.94	8.783	2.02	14.850	2.17	20.92	0.87
2.733	0.94	8.800	2.02	14.867	2.17	20.93	0.87
2.750	0.94	8.817	2.02	14.883	2.17	20.95	0.87
2.767	0.94	8.833	2.02	14.900	2.17	20.97	0.87
2.783	0.94	8.850	2.02	14.917	2.17	20.98	0.87
2.800	0.94	8.867	2.02	14.933	2.17	21.00	0.87
2.817	0.94	8.883	2.02	14.950	2.17	21.02	0.87
2.833	0.94	8.900	2.02	14.967	2.17	21.03	0.87
2.850	0.94	8.917	2.02	14.983	2.17	21.05	0.87
2.867	0.94	8.933	2.02	15.000	2.17	21.07	0.87
2.883	0.94	8.950	2.02	15.017	2.17	21.08	0.87
2.900	0.94	8.967	2.02	15.033	2.17	21.10	0.87
2.917	0.94	8.983	2.02	15.050	2.17	21.12	0.87
2.933	0.94	9.000	2.02	15.067	2.17	21.13	0.87
2.950	0.94	9.017	2.02	15.083	2.17	21.15	0.87
2.967	0.94	9.033	2.02	15.100	2.17	21.17	0.87
2.983	0.94	9.050	2.02	15.117	2.17	21.18	0.87
3.000	0.94	9.067	2.02	15.133	2.17	21.20	0.87
3.017	0.94	9.083	2.02	15.150	2.17	21.22	0.87
3.033	0.94	9.100	2.02	15.167	2.17	21.23	0.87
3.050	0.94	9.117	2.02	15.183	2.17	21.25	0.87
3.067	0.94	9.133	2.02	15.200	2.17	21.27	0.87
3.083	0.94	9.150	2.02	15.217	2.17	21.28	0.87
3.100	0.94	9.167	2.02	15.233	2.17	21.30	0.87
3.117	0.94	9.183	2.02	15.250	2.17	21.32	0.87
3.133	0.94	9.200	2.02	15.267	2.17	21.33	0.87
3.150	0.94	9.217	2.02	15.283	2.17	21.35	0.87
3.167	0.94	9.233	2.02	15.300	2.17	21.37	0.87
3.183	0.94	9.250	2.02	15.317	2.17	21.38	0.87
3.200	0.94	9.267	2.31	15.333	2.17	21.40	0.87
3.217	0.94	9.283	2.31	15.350	2.17	21.42	0.87
3.233	0.94	9.300	2.31	15.367	2.17	21.43	0.87
3.250	0.94	9.317	2.31	15.383	2.17	21.45	0.87
3.267	0.94	9.333	2.31	15.400	2.17	21.47	0.87
3.283	0.94	9.350	2.31	15.417	2.17	21.48	0.87
3.300	0.94	9.367	2.31	15.433	2.17	21.50	0.87
3.317	0.94	9.383	2.31	15.450	2.17	21.52	0.87
3.333	0.94	9.400	2.31	15.467	2.17	21.53	0.87
3.350	0.94	9.417	2.31	15.483	2.17	21.55	0.87
3.367	0.94	9.433	2.31	15.500	2.17	21.57	0.87
3.383	0.94	9.450	2.31	15.517	2.17	21.58	0.87
3.400	0.94	9.467	2.31	15.533	2.17	21.60	0.87
3.417	0.94	9.483	2.31	15.550	2.17	21.62	0.87
3.433	0.94	9.500	2.31	15.567	2.17	21.63	0.87
3.450	0.94	9.517	2.31	15.583	2.17	21.65	0.87
3.467	0.94	9.533	2.31	15.600	2.17	21.67	0.87
3.483	0.94	9.550	2.31	15.617	2.17	21.68	0.87
3.500	0.94	9.567	2.31	15.633	2.17	21.70	0.87
3.517	0.94	9.583	2.31	15.650	2.17	21.72	0.87

3.533	0.94	9.600	2.31	15.667	2.17	21.73	0.87
3.550	0.94	9.617	2.31	15.683	2.17	21.75	0.87
3.567	0.94	9.633	2.31	15.700	2.17	21.77	0.87
3.583	0.94	9.650	2.31	15.717	2.17	21.78	0.87
3.600	0.94	9.667	2.31	15.733	2.17	21.80	0.87
3.617	0.94	9.683	2.31	15.750	2.17	21.82	0.87
3.633	0.94	9.700	2.31	15.767	2.17	21.83	0.87
3.650	0.94	9.717	2.31	15.783	2.17	21.85	0.87
3.667	0.94	9.733	2.31	15.800	2.17	21.87	0.87
3.683	0.94	9.750	2.31	15.817	2.17	21.88	0.87
3.700	0.94	9.767	2.60	15.833	2.17	21.90	0.87
3.717	0.94	9.783	2.60	15.850	2.17	21.92	0.87
3.733	0.94	9.800	2.60	15.867	2.17	21.93	0.87
3.750	0.94	9.817	2.60	15.883	2.17	21.95	0.87
3.767	0.94	9.833	2.60	15.900	2.17	21.97	0.87
3.783	0.94	9.850	2.60	15.917	2.17	21.98	0.87
3.800	0.94	9.867	2.60	15.933	2.17	22.00	0.87
3.817	0.94	9.883	2.60	15.950	2.17	22.02	0.87
3.833	0.94	9.900	2.60	15.967	2.17	22.03	0.87
3.850	0.94	9.917	2.60	15.983	2.17	22.05	0.87
3.867	0.94	9.933	2.60	16.000	2.17	22.07	0.87
3.883	0.94	9.950	2.60	16.017	2.17	22.08	0.87
3.900	0.94	9.967	2.60	16.033	2.17	22.10	0.87
3.917	0.94	9.983	2.60	16.050	2.17	22.12	0.87
3.933	0.94	10.000	2.60	16.067	2.17	22.13	0.87
3.950	0.94	10.017	2.60	16.083	2.17	22.15	0.87
3.967	0.94	10.033	2.60	16.100	2.17	22.17	0.87
3.983	0.94	10.050	2.60	16.117	2.17	22.18	0.87
4.000	0.94	10.067	2.60	16.133	2.17	22.20	0.87
4.017	0.94	10.083	2.60	16.150	2.17	22.22	0.87
4.033	0.94	10.100	2.60	16.167	2.17	22.23	0.87
4.050	0.94	10.117	2.60	16.183	2.17	22.25	0.87
4.067	0.94	10.133	2.60	16.200	2.17	22.27	0.87
4.083	0.94	10.150	2.60	16.217	2.17	22.28	0.87
4.100	0.94	10.167	2.60	16.233	2.17	22.30	0.87
4.117	0.94	10.183	2.60	16.250	2.17	22.32	0.87
4.133	0.94	10.200	2.60	16.267	1.30	22.33	0.87
4.150	0.94	10.217	2.60	16.283	1.30	22.35	0.87
4.167	0.94	10.233	2.60	16.300	1.30	22.37	0.87
4.183	0.94	10.250	2.60	16.317	1.30	22.38	0.87
4.200	0.94	10.267	3.32	16.333	1.30	22.40	0.87
4.217	0.94	10.283	3.32	16.350	1.30	22.42	0.87
4.233	0.94	10.300	3.32	16.367	1.30	22.43	0.87
4.250	0.94	10.317	3.32	16.383	1.30	22.45	0.87
4.267	1.16	10.333	3.32	16.400	1.30	22.47	0.87
4.283	1.16	10.350	3.32	16.417	1.30	22.48	0.87
4.300	1.16	10.367	3.32	16.433	1.30	22.50	0.87
4.317	1.16	10.383	3.32	16.450	1.30	22.52	0.87
4.333	1.16	10.400	3.32	16.467	1.30	22.53	0.87
4.350	1.16	10.417	3.32	16.483	1.30	22.55	0.87
4.367	1.16	10.433	3.32	16.500	1.30	22.57	0.87
4.383	1.16	10.450	3.32	16.517	1.30	22.58	0.87
4.400	1.16	10.467	3.32	16.533	1.30	22.60	0.87
4.417	1.16	10.483	3.32	16.550	1.30	22.62	0.87
4.433	1.16	10.500	3.32	16.567	1.30	22.63	0.87
4.450	1.16	10.517	3.32	16.583	1.30	22.65	0.87
4.467	1.16	10.533	3.32	16.600	1.30	22.67	0.87
4.483	1.16	10.550	3.32	16.617	1.30	22.68	0.87
4.500	1.16	10.567	3.32	16.633	1.30	22.70	0.87
4.517	1.16	10.583	3.32	16.650	1.30	22.72	0.87
4.533	1.16	10.600	3.32	16.667	1.30	22.73	0.87
4.550	1.16	10.617	3.32	16.683	1.30	22.75	0.87
4.567	1.16	10.633	3.32	16.700	1.30	22.77	0.87
4.583	1.16	10.650	3.32	16.717	1.30	22.78	0.87
4.600	1.16	10.667	3.32	16.733	1.30	22.80	0.87
4.617	1.16	10.683	3.32	16.750	1.30	22.82	0.87
4.633	1.16	10.700	3.32	16.767	1.30	22.83	0.87
4.650	1.16	10.717	3.32	16.783	1.30	22.85	0.87
4.667	1.16	10.733	3.32	16.800	1.30	22.87	0.87
4.683	1.16	10.750	3.32	16.817	1.30	22.88	0.87
4.700	1.16	10.767	4.48	16.833	1.30	22.90	0.87
4.717	1.16	10.783	4.48	16.850	1.30	22.92	0.87
4.733	1.16	10.800	4.48	16.867	1.30	22.93	0.87
4.750	1.16	10.817	4.48	16.883	1.30	22.95	0.87
4.767	1.16	10.833	4.48	16.900	1.30	22.97	0.87
4.783	1.16	10.850	4.48	16.917	1.30	22.98	0.87
4.800	1.16	10.867	4.48	16.933	1.30	23.00	0.87
4.817	1.16	10.883	4.48	16.950	1.30	23.02	0.87
4.833	1.16	10.900	4.48	16.967	1.30	23.03	0.87
4.850	1.16	10.917	4.48	16.983	1.30	23.05	0.87
4.867	1.16	10.933	4.48	17.000	1.30	23.07	0.87
4.883	1.16	10.950	4.48	17.017	1.30	23.08	0.87
4.900	1.16	10.967	4.48	17.033	1.30	23.10	0.87
4.917	1.16	10.983	4.48	17.050	1.30	23.12	0.87
4.933	1.16	11.000	4.48	17.067	1.30	23.13	0.87
4.950	1.16	11.017	4.48	17.083	1.30	23.15	0.87
4.967	1.16	11.033	4.48	17.100	1.30	23.17	0.87
4.983	1.16	11.050	4.48	17.117	1.30	23.18	0.87
5.000	1.16	11.067	4.48	17.133	1.30	23.20	0.87
5.017	1.16	11.083	4.48	17.150	1.30	23.22	0.87
5.033	1.16	11.100	4.48	17.167	1.30	23.23	0.87
5.050	1.16	11.117	4.48	17.183	1.30	23.25	0.87
5.067	1.16	11.133	4.48	17.200	1.30	23.27	0.87
5.083	1.16	11.150	4.48	17.217	1.30	23.28	0.87
5.100	1.16	11.167	4.48	17.233	1.30	23.30	0.87
5.117	1.16	11.183	4.48	17.250	1.30	23.32	0.87
5.133	1.16	11.200	4.48	17.267	1.30	23.33	0.87
5.150	1.16	11.217	4.48	17.283	1.30	23.35	0.87
5.167	1.16	11.233	4.48	17.300	1.30	23.37	0.87
5.183	1.16	11.250	4.48	17.317	1.30	23.38	0.87

5.200	1.16	11.267	6.93	17.333	1.30	23.40	0.87
5.217	1.16	11.283	6.93	17.350	1.30	23.42	0.87
5.233	1.16	11.300	6.93	17.367	1.30	23.43	0.87
5.250	1.16	11.317	6.93	17.383	1.30	23.45	0.87
5.267	1.16	11.333	6.93	17.400	1.30	23.47	0.87
5.283	1.16	11.350	6.93	17.417	1.30	23.48	0.87
5.300	1.16	11.367	6.93	17.433	1.30	23.50	0.87
5.317	1.16	11.383	6.93	17.450	1.30	23.52	0.87
5.333	1.16	11.400	6.93	17.467	1.30	23.53	0.87
5.350	1.16	11.417	6.93	17.483	1.30	23.55	0.87
5.367	1.16	11.433	6.93	17.500	1.30	23.57	0.87
5.383	1.16	11.450	6.93	17.517	1.30	23.58	0.87
5.400	1.16	11.467	6.93	17.533	1.30	23.60	0.87
5.417	1.16	11.483	6.93	17.550	1.30	23.62	0.87
5.433	1.16	11.500	6.93	17.567	1.30	23.63	0.87
5.450	1.16	11.517	6.93	17.583	1.30	23.65	0.87
5.467	1.16	11.533	6.93	17.600	1.30	23.67	0.87
5.483	1.16	11.550	6.93	17.617	1.30	23.68	0.87
5.500	1.16	11.567	6.93	17.633	1.30	23.70	0.87
5.517	1.16	11.583	6.93	17.650	1.30	23.72	0.87
5.533	1.16	11.600	6.93	17.667	1.30	23.73	0.87
5.550	1.16	11.617	6.93	17.683	1.30	23.75	0.87
5.567	1.16	11.633	6.93	17.700	1.30	23.77	0.87
5.583	1.16	11.650	6.93	17.717	1.30	23.78	0.87
5.600	1.16	11.667	6.93	17.733	1.30	23.80	0.87
5.617	1.16	11.683	6.93	17.750	1.30	23.82	0.87
5.633	1.16	11.700	6.93	17.767	1.30	23.83	0.87
5.650	1.16	11.717	6.93	17.783	1.30	23.85	0.87
5.667	1.16	11.733	6.93	17.800	1.30	23.87	0.87
5.683	1.16	11.750	6.93	17.817	1.30	23.88	0.87
5.700	1.16	11.767	21.37	17.833	1.30	23.90	0.87
5.717	1.16	11.783	21.37	17.850	1.30	23.92	0.87
5.733	1.16	11.800	21.37	17.867	1.30	23.93	0.87
5.750	1.16	11.817	21.37	17.883	1.30	23.95	0.87
5.767	1.16	11.833	21.37	17.900	1.30	23.97	0.87
5.783	1.16	11.850	21.37	17.917	1.30	23.98	0.87
5.800	1.16	11.867	21.37	17.933	1.30	24.00	0.87
5.817	1.16	11.883	21.37	17.950	1.30	24.02	0.87
5.833	1.16	11.900	21.37	17.967	1.30	24.03	0.87
5.850	1.16	11.917	21.37	17.983	1.30	24.05	0.87
5.867	1.16	11.933	21.37	18.000	1.30	24.07	0.87
5.883	1.16	11.950	21.37	18.017	1.30	24.08	0.87
5.900	1.16	11.967	21.37	18.033	1.30	24.10	0.87
5.917	1.16	11.983	21.37	18.050	1.30	24.12	0.87
5.933	1.16	12.000	21.37	18.067	1.30	24.13	0.87
5.950	1.16	12.017	88.34	18.083	1.30	24.15	0.87
5.967	1.16	12.033	88.39	18.100	1.30	24.17	0.87
5.983	1.16	12.050	88.39	18.117	1.30	24.18	0.87
6.000	1.16	12.067	88.39	18.133	1.30	24.20	0.87
6.017	1.16	12.083	88.39	18.150	1.30	24.22	0.87
6.033	1.16	12.100	88.39	18.167	1.30	24.23	0.87
6.050	1.16	12.117	88.39	18.183	1.30	24.25	0.87
6.067	1.16	12.133	88.39	18.200	1.30		

Max.Eff.Inten.(mm/hr)=		88.39	18.39	
over (min)		5.00	6.00	
Storage Coeff. (min)=		0.94 (ii)	5.05 (ii)	
Unit Hyd. Tpeak (min)=		5.00	6.00	
Unit Hyd. peak (cms)=		0.48	0.21	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK	(hrs)=	12.23	12.27	12.25
RUNOFF VOLUME	(mm)=	70.21	12.77	41.48
TOTAL RAINFALL	(mm)=	72.21	72.21	72.21
RUNOFF COEFFICIENT	=	0.97	0.18	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:10- 25yr-24hr-SCS **
****

READ STORM	Filename: C:\Users\sthakkar\AppData\Local\Temp\3753745a-96ee-424b-bf39-441977d9a08f\aae4ae21
Ptotal= 86.28 mm	Comments: 25yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.55	12.50	12.42	18.75	1.55
0.25	0.95	6.50	1.55	12.75	6.38	19.00	1.55
0.50	0.95	6.75	1.55	13.00	6.38	19.25	1.55
0.75	0.95	7.00	1.55	13.25	4.66	19.50	1.55
1.00	0.95	7.25	1.90	13.50	4.66	19.75	1.55
1.25	0.95	7.50	1.90	13.75	3.62	20.00	1.55
1.50	0.95	7.75	1.90	14.00	3.62	20.25	1.04
1.75	0.95	8.00	1.90	14.25	2.59	20.50	1.04
2.00	0.95	8.25	2.24	14.50	2.59	20.75	1.04
2.25	1.12	8.50	2.24	14.75	2.59	21.00	1.04
2.50	1.12	8.75	2.42	15.00	2.59	21.25	1.04
2.75	1.12	9.00	2.42	15.25	2.59	21.50	1.04
3.00	1.12	9.25	2.76	15.50	2.59	21.75	1.04

3.25	1.12	9.50	2.76	15.75	2.59	22.00	1.04
3.50	1.12	9.75	3.11	16.00	2.59	22.25	1.04
3.75	1.12	10.00	3.11	16.25	1.55	22.50	1.04
4.00	1.12	10.25	3.97	16.50	1.55	22.75	1.04
4.25	1.38	10.50	3.97	16.75	1.55	23.00	1.04
4.50	1.38	10.75	5.35	17.00	1.55	23.25	1.04
4.75	1.38	11.00	5.35	17.25	1.55	23.50	1.04
5.00	1.38	11.25	8.28	17.50	1.55	23.75	1.04
5.25	1.38	11.50	8.28	17.75	1.55	24.00	1.04
5.50	1.38	11.75	25.54	18.00	1.55		
5.75	1.38	12.00	105.61	18.25	1.55		
6.00	1.38	12.25	12.42	18.50	1.55		

CALIB
STANDHYD (0101) | Area (ha)= 0.09
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.38	12.150	105.61	18.22	1.55
0.033	0.00	6.100	1.38	12.167	105.61	18.23	1.55
0.050	0.00	6.117	1.38	12.183	105.61	18.25	1.55
0.067	0.00	6.133	1.38	12.200	105.61	18.27	1.55
0.083	0.00	6.150	1.38	12.217	105.61	18.28	1.55
0.100	0.00	6.167	1.38	12.233	105.61	18.30	1.55
0.117	0.00	6.183	1.38	12.250	105.61	18.32	1.55
0.133	0.00	6.200	1.38	12.267	12.51	18.33	1.55
0.150	0.00	6.217	1.38	12.283	12.42	18.35	1.55
0.167	0.00	6.233	1.38	12.300	12.42	18.37	1.55
0.183	0.00	6.250	1.38	12.317	12.42	18.38	1.55
0.200	0.00	6.267	1.55	12.333	12.42	18.40	1.55
0.217	0.00	6.283	1.55	12.350	12.42	18.42	1.55
0.233	0.00	6.300	1.55	12.367	12.42	18.43	1.55
0.250	0.00	6.317	1.55	12.383	12.42	18.45	1.55
0.267	0.95	6.333	1.55	12.400	12.42	18.47	1.55
0.283	0.95	6.350	1.55	12.417	12.42	18.48	1.55
0.300	0.95	6.367	1.55	12.433	12.42	18.50	1.55
0.317	0.95	6.383	1.55	12.450	12.42	18.52	1.55
0.333	0.95	6.400	1.55	12.467	12.42	18.53	1.55
0.350	0.95	6.417	1.55	12.483	12.42	18.55	1.55
0.367	0.95	6.433	1.55	12.500	12.42	18.57	1.55
0.383	0.95	6.450	1.55	12.517	12.42	18.58	1.55
0.400	0.95	6.467	1.55	12.533	12.42	18.60	1.55
0.417	0.95	6.483	1.55	12.550	12.42	18.62	1.55
0.433	0.95	6.500	1.55	12.567	12.42	18.63	1.55
0.450	0.95	6.517	1.55	12.583	12.42	18.65	1.55
0.467	0.95	6.533	1.55	12.600	12.42	18.67	1.55
0.483	0.95	6.550	1.55	12.617	12.42	18.68	1.55
0.500	0.95	6.567	1.55	12.633	12.42	18.70	1.55
0.517	0.95	6.583	1.55	12.650	12.42	18.72	1.55
0.533	0.95	6.600	1.55	12.667	12.42	18.73	1.55
0.550	0.95	6.617	1.55	12.683	12.42	18.75	1.55
0.567	0.95	6.633	1.55	12.700	12.42	18.77	1.55
0.583	0.95	6.650	1.55	12.717	12.42	18.78	1.55
0.600	0.95	6.667	1.55	12.733	12.42	18.80	1.55
0.617	0.95	6.683	1.55	12.750	12.42	18.82	1.55
0.633	0.95	6.700	1.55	12.767	6.39	18.83	1.55
0.650	0.95	6.717	1.55	12.783	6.38	18.85	1.55
0.667	0.95	6.733	1.55	12.800	6.38	18.87	1.55
0.683	0.95	6.750	1.55	12.817	6.38	18.88	1.55
0.700	0.95	6.767	1.55	12.833	6.38	18.90	1.55
0.717	0.95	6.783	1.55	12.850	6.38	18.92	1.55
0.733	0.95	6.800	1.55	12.867	6.38	18.93	1.55
0.750	0.95	6.817	1.55	12.883	6.38	18.95	1.55
0.767	0.95	6.833	1.55	12.900	6.38	18.97	1.55
0.783	0.95	6.850	1.55	12.917	6.38	18.98	1.55
0.800	0.95	6.867	1.55	12.933	6.38	19.00	1.55
0.817	0.95	6.883	1.55	12.950	6.38	19.02	1.55
0.833	0.95	6.900	1.55	12.967	6.38	19.03	1.55
0.850	0.95	6.917	1.55	12.983	6.38	19.05	1.55
0.867	0.95	6.933	1.55	13.000	6.38	19.07	1.55
0.883	0.95	6.950	1.55	13.017	6.38	19.08	1.55
0.900	0.95	6.967	1.55	13.033	6.38	19.10	1.55
0.917	0.95	6.983	1.55	13.050	6.38	19.12	1.55
0.933	0.95	7.000	1.55	13.067	6.38	19.13	1.55
0.950	0.95	7.017	1.55	13.083	6.38	19.15	1.55
0.967	0.95	7.033	1.55	13.100	6.38	19.17	1.55
0.983	0.95	7.050	1.55	13.117	6.38	19.18	1.55
1.000	0.95	7.067	1.55	13.133	6.38	19.20	1.55
1.017	0.95	7.083	1.55	13.150	6.38	19.22	1.55
1.033	0.95	7.100	1.55	13.167	6.38	19.23	1.55
1.050	0.95	7.117	1.55	13.183	6.38	19.25	1.55
1.067	0.95	7.133	1.55	13.200	6.38	19.27	1.55
1.083	0.95	7.150	1.55	13.217	6.38	19.28	1.55
1.100	0.95	7.167	1.55	13.233	6.38	19.30	1.55
1.117	0.95	7.183	1.55	13.250	6.38	19.32	1.55

1.133	0.95	7.200	1.55	13.267	4.66	19.33	1.55
1.150	0.95	7.217	1.55	13.283	4.66	19.35	1.55
1.167	0.95	7.233	1.55	13.300	4.66	19.37	1.55
1.183	0.95	7.250	1.55	13.317	4.66	19.38	1.55
1.200	0.95	7.267	1.90	13.333	4.66	19.40	1.55
1.217	0.95	7.283	1.90	13.350	4.66	19.42	1.55
1.233	0.95	7.300	1.90	13.367	4.66	19.43	1.55
1.250	0.95	7.317	1.90	13.383	4.66	19.45	1.55
1.267	0.95	7.333	1.90	13.400	4.66	19.47	1.55
1.283	0.95	7.350	1.90	13.417	4.66	19.48	1.55
1.300	0.95	7.367	1.90	13.433	4.66	19.50	1.55
1.317	0.95	7.383	1.90	13.450	4.66	19.52	1.55
1.333	0.95	7.400	1.90	13.467	4.66	19.53	1.55
1.350	0.95	7.417	1.90	13.483	4.66	19.55	1.55
1.367	0.95	7.433	1.90	13.500	4.66	19.57	1.55
1.383	0.95	7.450	1.90	13.517	4.66	19.58	1.55
1.400	0.95	7.467	1.90	13.533	4.66	19.60	1.55
1.417	0.95	7.483	1.90	13.550	4.66	19.62	1.55
1.433	0.95	7.500	1.90	13.567	4.66	19.63	1.55
1.450	0.95	7.517	1.90	13.583	4.66	19.65	1.55
1.467	0.95	7.533	1.90	13.600	4.66	19.67	1.55
1.483	0.95	7.550	1.90	13.617	4.66	19.68	1.55
1.500	0.95	7.567	1.90	13.633	4.66	19.70	1.55
1.517	0.95	7.583	1.90	13.650	4.66	19.72	1.55
1.533	0.95	7.600	1.90	13.667	4.66	19.73	1.55
1.550	0.95	7.617	1.90	13.683	4.66	19.75	1.55
1.567	0.95	7.633	1.90	13.700	4.66	19.77	1.55
1.583	0.95	7.650	1.90	13.717	4.66	19.78	1.55
1.600	0.95	7.667	1.90	13.733	4.66	19.80	1.55
1.617	0.95	7.683	1.90	13.750	4.66	19.82	1.55
1.633	0.95	7.700	1.90	13.767	3.63	19.83	1.55
1.650	0.95	7.717	1.90	13.783	3.62	19.85	1.55
1.667	0.95	7.733	1.90	13.800	3.62	19.87	1.55
1.683	0.95	7.750	1.90	13.817	3.62	19.88	1.55
1.700	0.95	7.767	1.90	13.833	3.62	19.90	1.55
1.717	0.95	7.783	1.90	13.850	3.62	19.92	1.55
1.733	0.95	7.800	1.90	13.867	3.62	19.93	1.55
1.750	0.95	7.817	1.90	13.883	3.62	19.95	1.55
1.767	0.95	7.833	1.90	13.900	3.62	19.97	1.55
1.783	0.95	7.850	1.90	13.917	3.62	19.98	1.55
1.800	0.95	7.867	1.90	13.933	3.62	20.00	1.55
1.817	0.95	7.883	1.90	13.950	3.62	20.02	1.55
1.833	0.95	7.900	1.90	13.967	3.62	20.03	1.55
1.850	0.95	7.917	1.90	13.983	3.62	20.05	1.55
1.867	0.95	7.933	1.90	14.000	3.62	20.07	1.55
1.883	0.95	7.950	1.90	14.017	3.62	20.08	1.55
1.900	0.95	7.967	1.90	14.033	3.62	20.10	1.55
1.917	0.95	7.983	1.90	14.050	3.62	20.12	1.55
1.933	0.95	8.000	1.90	14.067	3.62	20.13	1.55
1.950	0.95	8.017	1.90	14.083	3.62	20.15	1.55
1.967	0.95	8.033	1.90	14.100	3.62	20.17	1.55
1.983	0.95	8.050	1.90	14.117	3.62	20.18	1.55
2.000	0.95	8.067	1.90	14.133	3.62	20.20	1.55
2.017	0.95	8.083	1.90	14.150	3.62	20.22	1.55
2.033	0.95	8.100	1.90	14.167	3.62	20.23	1.55
2.050	0.95	8.117	1.90	14.183	3.62	20.25	1.55
2.067	0.95	8.133	1.90	14.200	3.62	20.27	1.04
2.083	0.95	8.150	1.90	14.217	3.62	20.28	1.04
2.100	0.95	8.167	1.90	14.233	3.62	20.30	1.04
2.117	0.95	8.183	1.90	14.250	3.62	20.32	1.04
2.133	0.95	8.200	1.90	14.267	2.59	20.33	1.04
2.150	0.95	8.217	1.90	14.283	2.59	20.35	1.04
2.167	0.95	8.233	1.90	14.300	2.59	20.37	1.04
2.183	0.95	8.250	1.90	14.317	2.59	20.38	1.04
2.200	0.95	8.267	2.24	14.333	2.59	20.40	1.04
2.217	0.95	8.283	2.24	14.350	2.59	20.42	1.04
2.233	0.95	8.300	2.24	14.367	2.59	20.43	1.04
2.250	0.95	8.317	2.24	14.383	2.59	20.45	1.04
2.267	1.12	8.333	2.24	14.400	2.59	20.47	1.04
2.283	1.12	8.350	2.24	14.417	2.59	20.48	1.04
2.300	1.12	8.367	2.24	14.433	2.59	20.50	1.04
2.317	1.12	8.383	2.24	14.450	2.59	20.52	1.04
2.333	1.12	8.400	2.24	14.467	2.59	20.53	1.04
2.350	1.12	8.417	2.24	14.483	2.59	20.55	1.04
2.367	1.12	8.433	2.24	14.500	2.59	20.57	1.04
2.383	1.12	8.450	2.24	14.517	2.59	20.58	1.04
2.400	1.12	8.467	2.24	14.533	2.59	20.60	1.04
2.417	1.12	8.483	2.24	14.550	2.59	20.62	1.04
2.433	1.12	8.500	2.24	14.567	2.59	20.63	1.04
2.450	1.12	8.517	2.24	14.583	2.59	20.65	1.04
2.467	1.12	8.533	2.24	14.600	2.59	20.67	1.04
2.483	1.12	8.550	2.24	14.617	2.59	20.68	1.04
2.500	1.12	8.567	2.24	14.633	2.59	20.70	1.04
2.517	1.12	8.583	2.24	14.650	2.59	20.72	1.04
2.533	1.12	8.600	2.24	14.667	2.59	20.73	1.04
2.550	1.12	8.617	2.24	14.683	2.59	20.75	1.04
2.567	1.12	8.633	2.24	14.700	2.59	20.77	1.04
2.583	1.12	8.650	2.24	14.717	2.59	20.78	1.04
2.600	1.12	8.667	2.24	14.733	2.59	20.80	1.04
2.617	1.12	8.683	2.24	14.750	2.59	20.82	1.04
2.633	1.12	8.700	2.24	14.767	2.59	20.83	1.04
2.650	1.12	8.717	2.24	14.783	2.59	20.85	1.04
2.667	1.12	8.733	2.24	14.800	2.59	20.87	1.04
2.683	1.12	8.750	2.24	14.817	2.59	20.88	1.04
2.700	1.12	8.767	2.42	14.833	2.59	20.90	1.04
2.717	1.12	8.783	2.42	14.850	2.59	20.92	1.04
2.733	1.12	8.800	2.42	14.867	2.59	20.93	1.04
2.750	1.12	8.817	2.42	14.883	2.59	20.95	1.04
2.767	1.12	8.833	2.42	14.900	2.59	20.97	1.04
2.783	1.12	8.850	2.42	14.917	2.59	20.98	1.04

2.800	1.12	8.867	2.42	14.933	2.59	21.00	1.04
2.817	1.12	8.883	2.42	14.950	2.59	21.02	1.04
2.833	1.12	8.900	2.42	14.967	2.59	21.03	1.04
2.850	1.12	8.917	2.42	14.983	2.59	21.05	1.04
2.867	1.12	8.933	2.42	15.000	2.59	21.07	1.04
2.883	1.12	8.950	2.42	15.017	2.59	21.08	1.04
2.900	1.12	8.967	2.42	15.033	2.59	21.10	1.04
2.917	1.12	8.983	2.42	15.050	2.59	21.12	1.04
2.933	1.12	9.000	2.42	15.067	2.59	21.13	1.04
2.950	1.12	9.017	2.42	15.083	2.59	21.15	1.04
2.967	1.12	9.033	2.42	15.100	2.59	21.17	1.04
2.983	1.12	9.050	2.42	15.117	2.59	21.18	1.04
3.000	1.12	9.067	2.42	15.133	2.59	21.20	1.04
3.017	1.12	9.083	2.42	15.150	2.59	21.22	1.04
3.033	1.12	9.100	2.42	15.167	2.59	21.23	1.04
3.050	1.12	9.117	2.42	15.183	2.59	21.25	1.04
3.067	1.12	9.133	2.42	15.200	2.59	21.27	1.04
3.083	1.12	9.150	2.42	15.217	2.59	21.28	1.04
3.100	1.12	9.167	2.42	15.233	2.59	21.30	1.04
3.117	1.12	9.183	2.42	15.250	2.59	21.32	1.04
3.133	1.12	9.200	2.42	15.267	2.59	21.33	1.04
3.150	1.12	9.217	2.42	15.283	2.59	21.35	1.04
3.167	1.12	9.233	2.42	15.300	2.59	21.37	1.04
3.183	1.12	9.250	2.42	15.317	2.59	21.38	1.04
3.200	1.12	9.267	2.76	15.333	2.59	21.40	1.04
3.217	1.12	9.283	2.76	15.350	2.59	21.42	1.04
3.233	1.12	9.300	2.76	15.367	2.59	21.43	1.04
3.250	1.12	9.317	2.76	15.383	2.59	21.45	1.04
3.267	1.12	9.333	2.76	15.400	2.59	21.47	1.04
3.283	1.12	9.350	2.76	15.417	2.59	21.48	1.04
3.300	1.12	9.367	2.76	15.433	2.59	21.50	1.04
3.317	1.12	9.383	2.76	15.450	2.59	21.52	1.04
3.333	1.12	9.400	2.76	15.467	2.59	21.53	1.04
3.350	1.12	9.417	2.76	15.483	2.59	21.55	1.04
3.367	1.12	9.433	2.76	15.500	2.59	21.57	1.04
3.383	1.12	9.450	2.76	15.517	2.59	21.58	1.04
3.400	1.12	9.467	2.76	15.533	2.59	21.60	1.04
3.417	1.12	9.483	2.76	15.550	2.59	21.62	1.04
3.433	1.12	9.500	2.76	15.567	2.59	21.63	1.04
3.450	1.12	9.517	2.76	15.583	2.59	21.65	1.04
3.467	1.12	9.533	2.76	15.600	2.59	21.67	1.04
3.483	1.12	9.550	2.76	15.617	2.59	21.68	1.04
3.500	1.12	9.567	2.76	15.633	2.59	21.70	1.04
3.517	1.12	9.583	2.76	15.650	2.59	21.72	1.04
3.533	1.12	9.600	2.76	15.667	2.59	21.73	1.04
3.550	1.12	9.617	2.76	15.683	2.59	21.75	1.04
3.567	1.12	9.633	2.76	15.700	2.59	21.77	1.04
3.583	1.12	9.650	2.76	15.717	2.59	21.78	1.04
3.600	1.12	9.667	2.76	15.733	2.59	21.80	1.04
3.617	1.12	9.683	2.76	15.750	2.59	21.82	1.04
3.633	1.12	9.700	2.76	15.767	2.59	21.83	1.04
3.650	1.12	9.717	2.76	15.783	2.59	21.85	1.04
3.667	1.12	9.733	2.76	15.800	2.59	21.87	1.04
3.683	1.12	9.750	2.76	15.817	2.59	21.88	1.04
3.700	1.12	9.767	3.11	15.833	2.59	21.90	1.04
3.717	1.12	9.783	3.11	15.850	2.59	21.92	1.04
3.733	1.12	9.800	3.11	15.867	2.59	21.93	1.04
3.750	1.12	9.817	3.11	15.883	2.59	21.95	1.04
3.767	1.12	9.833	3.11	15.900	2.59	21.97	1.04
3.783	1.12	9.850	3.11	15.917	2.59	21.98	1.04
3.800	1.12	9.867	3.11	15.933	2.59	22.00	1.04
3.817	1.12	9.883	3.11	15.950	2.59	22.02	1.04
3.833	1.12	9.900	3.11	15.967	2.59	22.03	1.04
3.850	1.12	9.917	3.11	15.983	2.59	22.05	1.04
3.867	1.12	9.933	3.11	16.000	2.59	22.07	1.04
3.883	1.12	9.950	3.11	16.017	2.59	22.08	1.04
3.900	1.12	9.967	3.11	16.033	2.59	22.10	1.04
3.917	1.12	9.983	3.11	16.050	2.59	22.12	1.04
3.933	1.12	10.000	3.11	16.067	2.59	22.13	1.04
3.950	1.12	10.017	3.11	16.083	2.59	22.15	1.04
3.967	1.12	10.033	3.11	16.100	2.59	22.17	1.04
3.983	1.12	10.050	3.11	16.117	2.59	22.18	1.04
4.000	1.12	10.067	3.11	16.133	2.59	22.20	1.04
4.017	1.12	10.083	3.11	16.150	2.59	22.22	1.04
4.033	1.12	10.100	3.11	16.167	2.59	22.23	1.04
4.050	1.12	10.117	3.11	16.183	2.59	22.25	1.04
4.067	1.12	10.133	3.11	16.200	2.59	22.27	1.04
4.083	1.12	10.150	3.11	16.217	2.59	22.28	1.04
4.100	1.12	10.167	3.11	16.233	2.59	22.30	1.04
4.117	1.12	10.183	3.11	16.250	2.59	22.32	1.04
4.133	1.12	10.200	3.11	16.267	1.56	22.33	1.04
4.150	1.12	10.217	3.11	16.283	1.55	22.35	1.04
4.167	1.12	10.233	3.11	16.300	1.55	22.37	1.04
4.183	1.12	10.250	3.11	16.317	1.55	22.38	1.04
4.200	1.12	10.267	3.97	16.333	1.55	22.40	1.04
4.217	1.12	10.283	3.97	16.350	1.55	22.42	1.04
4.233	1.12	10.300	3.97	16.367	1.55	22.43	1.04
4.250	1.12	10.317	3.97	16.383	1.55	22.45	1.04
4.267	1.38	10.333	3.97	16.400	1.55	22.47	1.04
4.283	1.38	10.350	3.97	16.417	1.55	22.48	1.04
4.300	1.38	10.367	3.97	16.433	1.55	22.50	1.04
4.317	1.38	10.383	3.97	16.450	1.55	22.52	1.04
4.333	1.38	10.400	3.97	16.467	1.55	22.53	1.04
4.350	1.38	10.417	3.97	16.483	1.55	22.55	1.04
4.367	1.38	10.433	3.97	16.500	1.55	22.57	1.04
4.383	1.38	10.450	3.97	16.517	1.55	22.58	1.04
4.400	1.38	10.467	3.97	16.533	1.55	22.60	1.04
4.417	1.38	10.483	3.97	16.550	1.55	22.62	1.04
4.433	1.38	10.500	3.97	16.567	1.55	22.63	1.04
4.450	1.38	10.517	3.97	16.583	1.55	22.65	1.04

4.467	1.38	10.533	3.97	16.600	1.55	22.67	1.04
4.483	1.38	10.550	3.97	16.617	1.55	22.68	1.04
4.500	1.38	10.567	3.97	16.633	1.55	22.70	1.04
4.517	1.38	10.583	3.97	16.650	1.55	22.72	1.04
4.533	1.38	10.600	3.97	16.667	1.55	22.73	1.04
4.550	1.38	10.617	3.97	16.683	1.55	22.75	1.04
4.567	1.38	10.633	3.97	16.700	1.55	22.77	1.04
4.583	1.38	10.650	3.97	16.717	1.55	22.78	1.04
4.600	1.38	10.667	3.97	16.733	1.55	22.80	1.04
4.617	1.38	10.683	3.97	16.750	1.55	22.82	1.04
4.633	1.38	10.700	3.97	16.767	1.55	22.83	1.04
4.650	1.38	10.717	3.97	16.783	1.55	22.85	1.04
4.667	1.38	10.733	3.97	16.800	1.55	22.87	1.04
4.683	1.38	10.750	3.97	16.817	1.55	22.88	1.04
4.700	1.38	10.767	5.35	16.833	1.55	22.90	1.04
4.717	1.38	10.783	5.35	16.850	1.55	22.92	1.04
4.733	1.38	10.800	5.35	16.867	1.55	22.93	1.04
4.750	1.38	10.817	5.35	16.883	1.55	22.95	1.04
4.767	1.38	10.833	5.35	16.900	1.55	22.97	1.04
4.783	1.38	10.850	5.35	16.917	1.55	22.98	1.04
4.800	1.38	10.867	5.35	16.933	1.55	23.00	1.04
4.817	1.38	10.883	5.35	16.950	1.55	23.02	1.04
4.833	1.38	10.900	5.35	16.967	1.55	23.03	1.04
4.850	1.38	10.917	5.35	16.983	1.55	23.05	1.04
4.867	1.38	10.933	5.35	17.000	1.55	23.07	1.04
4.883	1.38	10.950	5.35	17.017	1.55	23.08	1.04
4.900	1.38	10.967	5.35	17.033	1.55	23.10	1.04
4.917	1.38	10.983	5.35	17.050	1.55	23.12	1.04
4.933	1.38	11.000	5.35	17.067	1.55	23.13	1.04
4.950	1.38	11.017	5.35	17.083	1.55	23.15	1.04
4.967	1.38	11.033	5.35	17.100	1.55	23.17	1.04
4.983	1.38	11.050	5.35	17.117	1.55	23.18	1.04
5.000	1.38	11.067	5.35	17.133	1.55	23.20	1.04
5.017	1.38	11.083	5.35	17.150	1.55	23.22	1.04
5.033	1.38	11.100	5.35	17.167	1.55	23.23	1.04
5.050	1.38	11.117	5.35	17.183	1.55	23.25	1.04
5.067	1.38	11.133	5.35	17.200	1.55	23.27	1.04
5.083	1.38	11.150	5.35	17.217	1.55	23.28	1.04
5.100	1.38	11.167	5.35	17.233	1.55	23.30	1.04
5.117	1.38	11.183	5.35	17.250	1.55	23.32	1.04
5.133	1.38	11.200	5.35	17.267	1.55	23.33	1.04
5.150	1.38	11.217	5.35	17.283	1.55	23.35	1.04
5.167	1.38	11.233	5.35	17.300	1.55	23.37	1.04
5.183	1.38	11.250	5.35	17.317	1.55	23.38	1.04
5.200	1.38	11.267	8.28	17.333	1.55	23.40	1.04
5.217	1.38	11.283	8.28	17.350	1.55	23.42	1.04
5.233	1.38	11.300	8.28	17.367	1.55	23.43	1.04
5.250	1.38	11.317	8.28	17.383	1.55	23.45	1.04
5.267	1.38	11.333	8.28	17.400	1.55	23.47	1.04
5.283	1.38	11.350	8.28	17.417	1.55	23.48	1.04
5.300	1.38	11.367	8.28	17.433	1.55	23.50	1.04
5.317	1.38	11.383	8.28	17.450	1.55	23.52	1.04
5.333	1.38	11.400	8.28	17.467	1.55	23.53	1.04
5.350	1.38	11.417	8.28	17.483	1.55	23.55	1.04
5.367	1.38	11.433	8.28	17.500	1.55	23.57	1.04
5.383	1.38	11.450	8.28	17.517	1.55	23.58	1.04
5.400	1.38	11.467	8.28	17.533	1.55	23.60	1.04
5.417	1.38	11.483	8.28	17.550	1.55	23.62	1.04
5.433	1.38	11.500	8.28	17.567	1.55	23.63	1.04
5.450	1.38	11.517	8.28	17.583	1.55	23.65	1.04
5.467	1.38	11.533	8.28	17.600	1.55	23.67	1.04
5.483	1.38	11.550	8.28	17.617	1.55	23.68	1.04
5.500	1.38	11.567	8.28	17.633	1.55	23.70	1.04
5.517	1.38	11.583	8.28	17.650	1.55	23.72	1.04
5.533	1.38	11.600	8.28	17.667	1.55	23.73	1.04
5.550	1.38	11.617	8.28	17.683	1.55	23.75	1.04
5.567	1.38	11.633	8.28	17.700	1.55	23.77	1.04
5.583	1.38	11.650	8.28	17.717	1.55	23.78	1.04
5.600	1.38	11.667	8.28	17.733	1.55	23.80	1.04
5.617	1.38	11.683	8.28	17.750	1.55	23.82	1.04
5.633	1.38	11.700	8.28	17.767	1.55	23.83	1.04
5.650	1.38	11.717	8.28	17.783	1.55	23.85	1.04
5.667	1.38	11.733	8.28	17.800	1.55	23.87	1.04
5.683	1.38	11.750	8.28	17.817	1.55	23.88	1.04
5.700	1.38	11.767	25.53	17.833	1.55	23.90	1.04
5.717	1.38	11.783	25.54	17.850	1.55	23.92	1.04
5.733	1.38	11.800	25.54	17.867	1.55	23.93	1.04
5.750	1.38	11.817	25.54	17.883	1.55	23.95	1.04
5.767	1.38	11.833	25.54	17.900	1.55	23.97	1.04
5.783	1.38	11.850	25.54	17.917	1.55	23.98	1.04
5.800	1.38	11.867	25.54	17.933	1.55	24.00	1.04
5.817	1.38	11.883	25.54	17.950	1.55	24.02	1.04
5.833	1.38	11.900	25.54	17.967	1.55	24.03	1.04
5.850	1.38	11.917	25.54	17.983	1.55	24.05	1.04
5.867	1.38	11.933	25.54	18.000	1.55	24.07	1.04
5.883	1.38	11.950	25.54	18.017	1.55	24.08	1.04
5.900	1.38	11.967	25.54	18.033	1.55	24.10	1.04
5.917	1.38	11.983	25.54	18.050	1.55	24.12	1.04
5.933	1.38	12.000	25.54	18.067	1.55	24.13	1.04
5.950	1.38	12.017	105.55	18.083	1.55	24.15	1.04
5.967	1.38	12.033	105.61	18.100	1.55	24.17	1.04
5.983	1.38	12.050	105.61	18.117	1.55	24.18	1.04
6.000	1.38	12.067	105.61	18.133	1.55	24.20	1.04
6.017	1.38	12.083	105.61	18.150	1.55	24.22	1.04
6.033	1.38	12.100	105.61	18.167	1.55	24.23	1.04
6.050	1.38	12.117	105.61	18.183	1.55	24.25	1.04
6.067	1.38	12.133	105.61	18.200	1.55		

Max.Eff.Inten.(mm/hr)=	105.61	25.91	
over (min)	5.00	5.00	

Storage Coeff. (min)=	0.87 (ii)	4.71 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.49	0.24	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.016 (iii)
TIME TO PEAK (hrs)=	12.23	12.27	12.25
RUNOFF VOLUME (mm)=	84.28	17.97	51.11
TOTAL RAINFALL (mm)=	86.28	86.28	86.28
RUNOFF COEFFICIENT =	0.98	0.21	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:11- 50yr-24hr-SCS **
****

READ STORM	Filename: C:\Users\sthakkar\AppData\Local\Temp\3753745a-96ee-424b-bf39-441977d9a08f\f81711fa
Ptotal= 96.53 mm	Comments: 50yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.74	12.50	13.90	18.75	1.74
0.25	1.06	6.50	1.74	12.75	7.14	19.00	1.74
0.50	1.06	6.75	1.74	13.00	7.14	19.25	1.74
0.75	1.06	7.00	1.74	13.25	5.21	19.50	1.74
1.00	1.06	7.25	2.12	13.50	5.21	19.75	1.74
1.25	1.06	7.50	2.12	13.75	4.05	20.00	1.74
1.50	1.06	7.75	2.12	14.00	4.05	20.25	1.16
1.75	1.06	8.00	2.12	14.25	2.90	20.50	1.16
2.00	1.06	8.25	2.51	14.50	2.90	20.75	1.16
2.25	1.25	8.50	2.51	14.75	2.90	21.00	1.16
2.50	1.25	8.75	2.70	15.00	2.90	21.25	1.16
2.75	1.25	9.00	2.70	15.25	2.90	21.50	1.16
3.00	1.25	9.25	3.09	15.50	2.90	21.75	1.16
3.25	1.25	9.50	3.09	15.75	2.90	22.00	1.16
3.50	1.25	9.75	3.48	16.00	2.90	22.25	1.16
3.75	1.25	10.00	3.48	16.25	1.74	22.50	1.16
4.00	1.25	10.25	4.44	16.50	1.74	22.75	1.16
4.25	1.54	10.50	4.44	16.75	1.74	23.00	1.16
4.50	1.54	10.75	5.98	17.00	1.74	23.25	1.16
4.75	1.54	11.00	5.98	17.25	1.74	23.50	1.16
5.00	1.54	11.25	9.27	17.50	1.74	23.75	1.16
5.25	1.54	11.50	9.27	17.75	1.74	24.00	1.16
5.50	1.54	11.75	28.57	18.00	1.74		
5.75	1.54	12.00	118.15	18.25	1.74		
6.00	1.54	12.25	13.90	18.50	1.74		

CALIB STANDHYD (0101) ID= 1 DT= 1.0 min	Area (ha)= 0.09 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.05
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	24.49	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.54	12.150	118.15	18.22	1.74
0.033	0.00	6.100	1.54	12.167	118.15	18.23	1.74
0.050	0.00	6.117	1.54	12.183	118.15	18.25	1.74
0.067	0.00	6.133	1.54	12.200	118.15	18.27	1.74
0.083	0.00	6.150	1.54	12.217	118.15	18.28	1.74
0.100	0.00	6.167	1.54	12.233	118.15	18.30	1.74
0.117	0.00	6.183	1.54	12.250	118.15	18.32	1.74
0.133	0.00	6.200	1.54	12.267	14.00	18.33	1.74
0.150	0.00	6.217	1.54	12.283	13.90	18.35	1.74
0.167	0.00	6.233	1.54	12.300	13.90	18.37	1.74
0.183	0.00	6.250	1.54	12.317	13.90	18.38	1.74
0.200	0.00	6.267	1.74	12.333	13.90	18.40	1.74
0.217	0.00	6.283	1.74	12.350	13.90	18.42	1.74
0.233	0.00	6.300	1.74	12.367	13.90	18.43	1.74
0.250	0.00	6.317	1.74	12.383	13.90	18.45	1.74
0.267	1.06	6.333	1.74	12.400	13.90	18.47	1.74
0.283	1.06	6.350	1.74	12.417	13.90	18.48	1.74
0.300	1.06	6.367	1.74	12.433	13.90	18.50	1.74
0.317	1.06	6.383	1.74	12.450	13.90	18.52	1.74
0.333	1.06	6.400	1.74	12.467	13.90	18.53	1.74
0.350	1.06	6.417	1.74	12.483	13.90	18.55	1.74
0.367	1.06	6.433	1.74	12.500	13.90	18.57	1.74
0.383	1.06	6.450	1.74	12.517	13.90	18.58	1.74

0.400	1.06	6.467	1.74	12.533	13.90	18.60	1.74
0.417	1.06	6.483	1.74	12.550	13.90	18.62	1.74
0.433	1.06	6.500	1.74	12.567	13.90	18.63	1.74
0.450	1.06	6.517	1.74	12.583	13.90	18.65	1.74
0.467	1.06	6.533	1.74	12.600	13.90	18.67	1.74
0.483	1.06	6.550	1.74	12.617	13.90	18.68	1.74
0.500	1.06	6.567	1.74	12.633	13.90	18.70	1.74
0.517	1.06	6.583	1.74	12.650	13.90	18.72	1.74
0.533	1.06	6.600	1.74	12.667	13.90	18.73	1.74
0.550	1.06	6.617	1.74	12.683	13.90	18.75	1.74
0.567	1.06	6.633	1.74	12.700	13.90	18.77	1.74
0.583	1.06	6.650	1.74	12.717	13.90	18.78	1.74
0.600	1.06	6.667	1.74	12.733	13.90	18.80	1.74
0.617	1.06	6.683	1.74	12.750	13.90	18.82	1.74
0.633	1.06	6.700	1.74	12.767	7.15	18.83	1.74
0.650	1.06	6.717	1.74	12.783	7.14	18.85	1.74
0.667	1.06	6.733	1.74	12.800	7.14	18.87	1.74
0.683	1.06	6.750	1.74	12.817	7.14	18.88	1.74
0.700	1.06	6.767	1.74	12.833	7.14	18.90	1.74
0.717	1.06	6.783	1.74	12.850	7.14	18.92	1.74
0.733	1.06	6.800	1.74	12.867	7.14	18.93	1.74
0.750	1.06	6.817	1.74	12.883	7.14	18.95	1.74
0.767	1.06	6.833	1.74	12.900	7.14	18.97	1.74
0.783	1.06	6.850	1.74	12.917	7.14	18.98	1.74
0.800	1.06	6.867	1.74	12.933	7.14	19.00	1.74
0.817	1.06	6.883	1.74	12.950	7.14	19.02	1.74
0.833	1.06	6.900	1.74	12.967	7.14	19.03	1.74
0.850	1.06	6.917	1.74	12.983	7.14	19.05	1.74
0.867	1.06	6.933	1.74	13.000	7.14	19.07	1.74
0.883	1.06	6.950	1.74	13.017	7.14	19.08	1.74
0.900	1.06	6.967	1.74	13.033	7.14	19.10	1.74
0.917	1.06	6.983	1.74	13.050	7.14	19.12	1.74
0.933	1.06	7.000	1.74	13.067	7.14	19.13	1.74
0.950	1.06	7.017	1.74	13.083	7.14	19.15	1.74
0.967	1.06	7.033	1.74	13.100	7.14	19.17	1.74
0.983	1.06	7.050	1.74	13.117	7.14	19.18	1.74
1.000	1.06	7.067	1.74	13.133	7.14	19.20	1.74
1.017	1.06	7.083	1.74	13.150	7.14	19.22	1.74
1.033	1.06	7.100	1.74	13.167	7.14	19.23	1.74
1.050	1.06	7.117	1.74	13.183	7.14	19.25	1.74
1.067	1.06	7.133	1.74	13.200	7.14	19.27	1.74
1.083	1.06	7.150	1.74	13.217	7.14	19.28	1.74
1.100	1.06	7.167	1.74	13.233	7.14	19.30	1.74
1.117	1.06	7.183	1.74	13.250	7.14	19.32	1.74
1.133	1.06	7.200	1.74	13.267	5.22	19.33	1.74
1.150	1.06	7.217	1.74	13.283	5.21	19.35	1.74
1.167	1.06	7.233	1.74	13.300	5.21	19.37	1.74
1.183	1.06	7.250	1.74	13.317	5.21	19.38	1.74
1.200	1.06	7.267	2.12	13.333	5.21	19.40	1.74
1.217	1.06	7.283	2.12	13.350	5.21	19.42	1.74
1.233	1.06	7.300	2.12	13.367	5.21	19.43	1.74
1.250	1.06	7.317	2.12	13.383	5.21	19.45	1.74
1.267	1.06	7.333	2.12	13.400	5.21	19.47	1.74
1.283	1.06	7.350	2.12	13.417	5.21	19.48	1.74
1.300	1.06	7.367	2.12	13.433	5.21	19.50	1.74
1.317	1.06	7.383	2.12	13.450	5.21	19.52	1.74
1.333	1.06	7.400	2.12	13.467	5.21	19.53	1.74
1.350	1.06	7.417	2.12	13.483	5.21	19.55	1.74
1.367	1.06	7.433	2.12	13.500	5.21	19.57	1.74
1.383	1.06	7.450	2.12	13.517	5.21	19.58	1.74
1.400	1.06	7.467	2.12	13.533	5.21	19.60	1.74
1.417	1.06	7.483	2.12	13.550	5.21	19.62	1.74
1.433	1.06	7.500	2.12	13.567	5.21	19.63	1.74
1.450	1.06	7.517	2.12	13.583	5.21	19.65	1.74
1.467	1.06	7.533	2.12	13.600	5.21	19.67	1.74
1.483	1.06	7.550	2.12	13.617	5.21	19.68	1.74
1.500	1.06	7.567	2.12	13.633	5.21	19.70	1.74
1.517	1.06	7.583	2.12	13.650	5.21	19.72	1.74
1.533	1.06	7.600	2.12	13.667	5.21	19.73	1.74
1.550	1.06	7.617	2.12	13.683	5.21	19.75	1.74
1.567	1.06	7.633	2.12	13.700	5.21	19.77	1.74
1.583	1.06	7.650	2.12	13.717	5.21	19.78	1.74
1.600	1.06	7.667	2.12	13.733	5.21	19.80	1.74
1.617	1.06	7.683	2.12	13.750	5.21	19.82	1.74
1.633	1.06	7.700	2.12	13.767	4.06	19.83	1.74
1.650	1.06	7.717	2.12	13.783	4.05	19.85	1.74
1.667	1.06	7.733	2.12	13.800	4.05	19.87	1.74
1.683	1.06	7.750	2.12	13.817	4.05	19.88	1.74
1.700	1.06	7.767	2.12	13.833	4.05	19.90	1.74
1.717	1.06	7.783	2.12	13.850	4.05	19.92	1.74
1.733	1.06	7.800	2.12	13.867	4.05	19.93	1.74
1.750	1.06	7.817	2.12	13.883	4.05	19.95	1.74
1.767	1.06	7.833	2.12	13.900	4.05	19.97	1.74
1.783	1.06	7.850	2.12	13.917	4.05	19.98	1.74
1.800	1.06	7.867	2.12	13.933	4.05	20.00	1.74
1.817	1.06	7.883	2.12	13.950	4.05	20.02	1.74
1.833	1.06	7.900	2.12	13.967	4.05	20.03	1.74
1.850	1.06	7.917	2.12	13.983	4.05	20.05	1.74
1.867	1.06	7.933	2.12	14.000	4.05	20.07	1.74
1.883	1.06	7.950	2.12	14.017	4.05	20.08	1.74
1.900	1.06	7.967	2.12	14.033	4.05	20.10	1.74
1.917	1.06	7.983	2.12	14.050	4.05	20.12	1.74
1.933	1.06	8.000	2.12	14.067	4.05	20.13	1.74
1.950	1.06	8.017	2.12	14.083	4.05	20.15	1.74
1.967	1.06	8.033	2.12	14.100	4.05	20.17	1.74
1.983	1.06	8.050	2.12	14.117	4.05	20.18	1.74
2.000	1.06	8.067	2.12	14.133	4.05	20.20	1.74
2.017	1.06	8.083	2.12	14.150	4.05	20.22	1.74
2.033	1.06	8.100	2.12	14.167	4.05	20.23	1.74
2.050	1.06	8.117	2.12	14.183	4.05	20.25	1.74

2.067	1.06	8.133	2.12	14.200	4.05	20.27	1.16
2.083	1.06	8.150	2.12	14.217	4.05	20.28	1.16
2.100	1.06	8.167	2.12	14.233	4.05	20.30	1.16
2.117	1.06	8.183	2.12	14.250	4.05	20.32	1.16
2.133	1.06	8.200	2.12	14.267	2.90	20.33	1.16
2.150	1.06	8.217	2.12	14.283	2.90	20.35	1.16
2.167	1.06	8.233	2.12	14.300	2.90	20.37	1.16
2.183	1.06	8.250	2.12	14.317	2.90	20.38	1.16
2.200	1.06	8.267	2.51	14.333	2.90	20.40	1.16
2.217	1.06	8.283	2.51	14.350	2.90	20.42	1.16
2.233	1.06	8.300	2.51	14.367	2.90	20.43	1.16
2.250	1.06	8.317	2.51	14.383	2.90	20.45	1.16
2.267	1.25	8.333	2.51	14.400	2.90	20.47	1.16
2.283	1.25	8.350	2.51	14.417	2.90	20.48	1.16
2.300	1.25	8.367	2.51	14.433	2.90	20.50	1.16
2.317	1.25	8.383	2.51	14.450	2.90	20.52	1.16
2.333	1.25	8.400	2.51	14.467	2.90	20.53	1.16
2.350	1.25	8.417	2.51	14.483	2.90	20.55	1.16
2.367	1.25	8.433	2.51	14.500	2.90	20.57	1.16
2.383	1.25	8.450	2.51	14.517	2.90	20.58	1.16
2.400	1.25	8.467	2.51	14.533	2.90	20.60	1.16
2.417	1.25	8.483	2.51	14.550	2.90	20.62	1.16
2.433	1.25	8.500	2.51	14.567	2.90	20.63	1.16
2.450	1.25	8.517	2.51	14.583	2.90	20.65	1.16
2.467	1.25	8.533	2.51	14.600	2.90	20.67	1.16
2.483	1.25	8.550	2.51	14.617	2.90	20.68	1.16
2.500	1.25	8.567	2.51	14.633	2.90	20.70	1.16
2.517	1.25	8.583	2.51	14.650	2.90	20.72	1.16
2.533	1.25	8.600	2.51	14.667	2.90	20.73	1.16
2.550	1.25	8.617	2.51	14.683	2.90	20.75	1.16
2.567	1.25	8.633	2.51	14.700	2.90	20.77	1.16
2.583	1.25	8.650	2.51	14.717	2.90	20.78	1.16
2.600	1.25	8.667	2.51	14.733	2.90	20.80	1.16
2.617	1.25	8.683	2.51	14.750	2.90	20.82	1.16
2.633	1.25	8.700	2.51	14.767	2.90	20.83	1.16
2.650	1.25	8.717	2.51	14.783	2.90	20.85	1.16
2.667	1.25	8.733	2.51	14.800	2.90	20.87	1.16
2.683	1.25	8.750	2.51	14.817	2.90	20.88	1.16
2.700	1.25	8.767	2.70	14.833	2.90	20.90	1.16
2.717	1.25	8.783	2.70	14.850	2.90	20.92	1.16
2.733	1.25	8.800	2.70	14.867	2.90	20.93	1.16
2.750	1.25	8.817	2.70	14.883	2.90	20.95	1.16
2.767	1.25	8.833	2.70	14.900	2.90	20.97	1.16
2.783	1.25	8.850	2.70	14.917	2.90	20.98	1.16
2.800	1.25	8.867	2.70	14.933	2.90	21.00	1.16
2.817	1.25	8.883	2.70	14.950	2.90	21.02	1.16
2.833	1.25	8.900	2.70	14.967	2.90	21.03	1.16
2.850	1.25	8.917	2.70	14.983	2.90	21.05	1.16
2.867	1.25	8.933	2.70	15.000	2.90	21.07	1.16
2.883	1.25	8.950	2.70	15.017	2.90	21.08	1.16
2.900	1.25	8.967	2.70	15.033	2.90	21.10	1.16
2.917	1.25	8.983	2.70	15.050	2.90	21.12	1.16
2.933	1.25	9.000	2.70	15.067	2.90	21.13	1.16
2.950	1.25	9.017	2.70	15.083	2.90	21.15	1.16
2.967	1.25	9.033	2.70	15.100	2.90	21.17	1.16
2.983	1.25	9.050	2.70	15.117	2.90	21.18	1.16
3.000	1.25	9.067	2.70	15.133	2.90	21.20	1.16
3.017	1.25	9.083	2.70	15.150	2.90	21.22	1.16
3.033	1.25	9.100	2.70	15.167	2.90	21.23	1.16
3.050	1.25	9.117	2.70	15.183	2.90	21.25	1.16
3.067	1.25	9.133	2.70	15.200	2.90	21.27	1.16
3.083	1.25	9.150	2.70	15.217	2.90	21.28	1.16
3.100	1.25	9.167	2.70	15.233	2.90	21.30	1.16
3.117	1.25	9.183	2.70	15.250	2.90	21.32	1.16
3.133	1.25	9.200	2.70	15.267	2.90	21.33	1.16
3.150	1.25	9.217	2.70	15.283	2.90	21.35	1.16
3.167	1.25	9.233	2.70	15.300	2.90	21.37	1.16
3.183	1.25	9.250	2.70	15.317	2.90	21.38	1.16
3.200	1.25	9.267	3.09	15.333	2.90	21.40	1.16
3.217	1.25	9.283	3.09	15.350	2.90	21.42	1.16
3.233	1.25	9.300	3.09	15.367	2.90	21.43	1.16
3.250	1.25	9.317	3.09	15.383	2.90	21.45	1.16
3.267	1.25	9.333	3.09	15.400	2.90	21.47	1.16
3.283	1.25	9.350	3.09	15.417	2.90	21.48	1.16
3.300	1.25	9.367	3.09	15.433	2.90	21.50	1.16
3.317	1.25	9.383	3.09	15.450	2.90	21.52	1.16
3.333	1.25	9.400	3.09	15.467	2.90	21.53	1.16
3.350	1.25	9.417	3.09	15.483	2.90	21.55	1.16
3.367	1.25	9.433	3.09	15.500	2.90	21.57	1.16
3.383	1.25	9.450	3.09	15.517	2.90	21.58	1.16
3.400	1.25	9.467	3.09	15.533	2.90	21.60	1.16
3.417	1.25	9.483	3.09	15.550	2.90	21.62	1.16
3.433	1.25	9.500	3.09	15.567	2.90	21.63	1.16
3.450	1.25	9.517	3.09	15.583	2.90	21.65	1.16
3.467	1.25	9.533	3.09	15.600	2.90	21.67	1.16
3.483	1.25	9.550	3.09	15.617	2.90	21.68	1.16
3.500	1.25	9.567	3.09	15.633	2.90	21.70	1.16
3.517	1.25	9.583	3.09	15.650	2.90	21.72	1.16
3.533	1.25	9.600	3.09	15.667	2.90	21.73	1.16
3.550	1.25	9.617	3.09	15.683	2.90	21.75	1.16
3.567	1.25	9.633	3.09	15.700	2.90	21.77	1.16
3.583	1.25	9.650	3.09	15.717	2.90	21.78	1.16
3.600	1.25	9.667	3.09	15.733	2.90	21.80	1.16
3.617	1.25	9.683	3.09	15.750	2.90	21.82	1.16
3.633	1.25	9.700	3.09	15.767	2.90	21.83	1.16
3.650	1.25	9.717	3.09	15.783	2.90	21.85	1.16
3.667	1.25	9.733	3.09	15.800	2.90	21.87	1.16
3.683	1.25	9.750	3.09	15.817	2.90	21.88	1.16
3.700	1.25	9.767	3.48	15.833	2.90	21.90	1.16
3.717	1.25	9.783	3.48	15.850	2.90	21.92	1.16

3.733	1.25	9.800	3.48	15.867	2.90	21.93	1.16
3.750	1.25	9.817	3.48	15.883	2.90	21.95	1.16
3.767	1.25	9.833	3.48	15.900	2.90	21.97	1.16
3.783	1.25	9.850	3.48	15.917	2.90	21.98	1.16
3.800	1.25	9.867	3.48	15.933	2.90	22.00	1.16
3.817	1.25	9.883	3.48	15.950	2.90	22.02	1.16
3.833	1.25	9.900	3.48	15.967	2.90	22.03	1.16
3.850	1.25	9.917	3.48	15.983	2.90	22.05	1.16
3.867	1.25	9.933	3.48	16.000	2.90	22.07	1.16
3.883	1.25	9.950	3.48	16.017	2.90	22.08	1.16
3.900	1.25	9.967	3.48	16.033	2.90	22.10	1.16
3.917	1.25	9.983	3.48	16.050	2.90	22.12	1.16
3.933	1.25	10.000	3.48	16.067	2.90	22.13	1.16
3.950	1.25	10.017	3.48	16.083	2.90	22.15	1.16
3.967	1.25	10.033	3.48	16.100	2.90	22.17	1.16
3.983	1.25	10.050	3.48	16.117	2.90	22.18	1.16
4.000	1.25	10.067	3.48	16.133	2.90	22.20	1.16
4.017	1.25	10.083	3.48	16.150	2.90	22.22	1.16
4.033	1.25	10.100	3.48	16.167	2.90	22.23	1.16
4.050	1.25	10.117	3.48	16.183	2.90	22.25	1.16
4.067	1.25	10.133	3.48	16.200	2.90	22.27	1.16
4.083	1.25	10.150	3.48	16.217	2.90	22.28	1.16
4.100	1.25	10.167	3.48	16.233	2.90	22.30	1.16
4.117	1.25	10.183	3.48	16.250	2.90	22.32	1.16
4.133	1.25	10.200	3.48	16.267	1.74	22.33	1.16
4.150	1.25	10.217	3.48	16.283	1.74	22.35	1.16
4.167	1.25	10.233	3.48	16.300	1.74	22.37	1.16
4.183	1.25	10.250	3.48	16.317	1.74	22.38	1.16
4.200	1.25	10.267	4.44	16.333	1.74	22.40	1.16
4.217	1.25	10.283	4.44	16.350	1.74	22.42	1.16
4.233	1.25	10.300	4.44	16.367	1.74	22.43	1.16
4.250	1.25	10.317	4.44	16.383	1.74	22.45	1.16
4.267	1.54	10.333	4.44	16.400	1.74	22.47	1.16
4.283	1.54	10.350	4.44	16.417	1.74	22.48	1.16
4.300	1.54	10.367	4.44	16.433	1.74	22.50	1.16
4.317	1.54	10.383	4.44	16.450	1.74	22.52	1.16
4.333	1.54	10.400	4.44	16.467	1.74	22.53	1.16
4.350	1.54	10.417	4.44	16.483	1.74	22.55	1.16
4.367	1.54	10.433	4.44	16.500	1.74	22.57	1.16
4.383	1.54	10.450	4.44	16.517	1.74	22.58	1.16
4.400	1.54	10.467	4.44	16.533	1.74	22.60	1.16
4.417	1.54	10.483	4.44	16.550	1.74	22.62	1.16
4.433	1.54	10.500	4.44	16.567	1.74	22.63	1.16
4.450	1.54	10.517	4.44	16.583	1.74	22.65	1.16
4.467	1.54	10.533	4.44	16.600	1.74	22.67	1.16
4.483	1.54	10.550	4.44	16.617	1.74	22.68	1.16
4.500	1.54	10.567	4.44	16.633	1.74	22.70	1.16
4.517	1.54	10.583	4.44	16.650	1.74	22.72	1.16
4.533	1.54	10.600	4.44	16.667	1.74	22.73	1.16
4.550	1.54	10.617	4.44	16.683	1.74	22.75	1.16
4.567	1.54	10.633	4.44	16.700	1.74	22.77	1.16
4.583	1.54	10.650	4.44	16.717	1.74	22.78	1.16
4.600	1.54	10.667	4.44	16.733	1.74	22.80	1.16
4.617	1.54	10.683	4.44	16.750	1.74	22.82	1.16
4.633	1.54	10.700	4.44	16.767	1.74	22.83	1.16
4.650	1.54	10.717	4.44	16.783	1.74	22.85	1.16
4.667	1.54	10.733	4.44	16.800	1.74	22.87	1.16
4.683	1.54	10.750	4.44	16.817	1.74	22.88	1.16
4.700	1.54	10.767	5.98	16.833	1.74	22.90	1.16
4.717	1.54	10.783	5.98	16.850	1.74	22.92	1.16
4.733	1.54	10.800	5.98	16.867	1.74	22.93	1.16
4.750	1.54	10.817	5.98	16.883	1.74	22.95	1.16
4.767	1.54	10.833	5.98	16.900	1.74	22.97	1.16
4.783	1.54	10.850	5.98	16.917	1.74	22.98	1.16
4.800	1.54	10.867	5.98	16.933	1.74	23.00	1.16
4.817	1.54	10.883	5.98	16.950	1.74	23.02	1.16
4.833	1.54	10.900	5.98	16.967	1.74	23.03	1.16
4.850	1.54	10.917	5.98	16.983	1.74	23.05	1.16
4.867	1.54	10.933	5.98	17.000	1.74	23.07	1.16
4.883	1.54	10.950	5.98	17.017	1.74	23.08	1.16
4.900	1.54	10.967	5.98	17.033	1.74	23.10	1.16
4.917	1.54	10.983	5.98	17.050	1.74	23.12	1.16
4.933	1.54	11.000	5.98	17.067	1.74	23.13	1.16
4.950	1.54	11.017	5.98	17.083	1.74	23.15	1.16
4.967	1.54	11.033	5.98	17.100	1.74	23.17	1.16
4.983	1.54	11.050	5.98	17.117	1.74	23.18	1.16
5.000	1.54	11.067	5.98	17.133	1.74	23.20	1.16
5.017	1.54	11.083	5.98	17.150	1.74	23.22	1.16
5.033	1.54	11.100	5.98	17.167	1.74	23.23	1.16
5.050	1.54	11.117	5.98	17.183	1.74	23.25	1.16
5.067	1.54	11.133	5.98	17.200	1.74	23.27	1.16
5.083	1.54	11.150	5.98	17.217	1.74	23.28	1.16
5.100	1.54	11.167	5.98	17.233	1.74	23.30	1.16
5.117	1.54	11.183	5.98	17.250	1.74	23.32	1.16
5.133	1.54	11.200	5.98	17.267	1.74	23.33	1.16
5.150	1.54	11.217	5.98	17.283	1.74	23.35	1.16
5.167	1.54	11.233	5.98	17.300	1.74	23.37	1.16
5.183	1.54	11.250	5.98	17.317	1.74	23.38	1.16
5.200	1.54	11.267	9.27	17.333	1.74	23.40	1.16
5.217	1.54	11.283	9.27	17.350	1.74	23.42	1.16
5.233	1.54	11.300	9.27	17.367	1.74	23.43	1.16
5.250	1.54	11.317	9.27	17.383	1.74	23.45	1.16
5.267	1.54	11.333	9.27	17.400	1.74	23.47	1.16
5.283	1.54	11.350	9.27	17.417	1.74	23.48	1.16
5.300	1.54	11.367	9.27	17.433	1.74	23.50	1.16
5.317	1.54	11.383	9.27	17.450	1.74	23.52	1.16
5.333	1.54	11.400	9.27	17.467	1.74	23.53	1.16
5.350	1.54	11.417	9.27	17.483	1.74	23.55	1.16
5.367	1.54	11.433	9.27	17.500	1.74	23.57	1.16
5.383	1.54	11.450	9.27	17.517	1.74	23.58	1.16

5.400	1.54	11.467	9.27	17.533	1.74	23.60	1.16
5.417	1.54	11.483	9.27	17.550	1.74	23.62	1.16
5.433	1.54	11.500	9.27	17.567	1.74	23.63	1.16
5.450	1.54	11.517	9.27	17.583	1.74	23.65	1.16
5.467	1.54	11.533	9.27	17.600	1.74	23.67	1.16
5.483	1.54	11.550	9.27	17.617	1.74	23.68	1.16
5.500	1.54	11.567	9.27	17.633	1.74	23.70	1.16
5.517	1.54	11.583	9.27	17.650	1.74	23.72	1.16
5.533	1.54	11.600	9.27	17.667	1.74	23.73	1.16
5.550	1.54	11.617	9.27	17.683	1.74	23.75	1.16
5.567	1.54	11.633	9.27	17.700	1.74	23.77	1.16
5.583	1.54	11.650	9.27	17.717	1.74	23.78	1.16
5.600	1.54	11.667	9.27	17.733	1.74	23.80	1.16
5.617	1.54	11.683	9.27	17.750	1.74	23.82	1.16
5.633	1.54	11.700	9.27	17.767	1.74	23.83	1.16
5.650	1.54	11.717	9.27	17.783	1.74	23.85	1.16
5.667	1.54	11.733	9.27	17.800	1.74	23.87	1.16
5.683	1.54	11.750	9.27	17.817	1.74	23.88	1.16
5.700	1.54	11.767	28.56	17.833	1.74	23.90	1.16
5.717	1.54	11.783	28.57	17.850	1.74	23.92	1.16
5.733	1.54	11.800	28.57	17.867	1.74	23.93	1.16
5.750	1.54	11.817	28.57	17.883	1.74	23.95	1.16
5.767	1.54	11.833	28.57	17.900	1.74	23.97	1.16
5.783	1.54	11.850	28.57	17.917	1.74	23.98	1.16
5.800	1.54	11.867	28.57	17.933	1.74	24.00	1.16
5.817	1.54	11.883	28.57	17.950	1.74	24.02	1.16
5.833	1.54	11.900	28.57	17.967	1.74	24.03	1.16
5.850	1.54	11.917	28.57	17.983	1.74	24.05	1.16
5.867	1.54	11.933	28.57	18.000	1.74	24.07	1.16
5.883	1.54	11.950	28.57	18.017	1.74	24.08	1.16
5.900	1.54	11.967	28.57	18.033	1.74	24.10	1.16
5.917	1.54	11.983	28.57	18.050	1.74	24.12	1.16
5.933	1.54	12.000	28.57	18.067	1.74	24.13	1.16
5.950	1.54	12.017	118.09	18.083	1.74	24.15	1.16
5.967	1.54	12.033	118.15	18.100	1.74	24.17	1.16
5.983	1.54	12.050	118.15	18.117	1.74	24.18	1.16
6.000	1.54	12.067	118.15	18.133	1.74	24.20	1.16
6.017	1.54	12.083	118.15	18.150	1.74	24.22	1.16
6.033	1.54	12.100	118.15	18.167	1.74	24.23	1.16
6.050	1.54	12.117	118.15	18.183	1.74	24.25	1.16
6.067	1.54	12.133	118.15	18.200	1.74		

Max.Eff.Inten.(mm/hr)=	118.15	32.00	
over (min)	5.00	5.00	
Storage Coeff. (min)=	0.83 (ii)	4.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.50	0.24	
			TOTALS
PEAK FLOW (cms)=	0.01	0.00	0.018 (iii)
TIME TO PEAK (hrs)=	12.22	12.27	12.25

RUNOFF VOLUME (mm)=	94.53	22.17	58.33
TOTAL RAINFALL (mm)=	96.53	96.53	96.53
RUNOFF COEFFICIENT =	0.98	0.23	0.60

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

****
** SIMULATION:12- 100yr-24hr-SCS **
****

READ STORM	Filename: C:\Users\sthakkar\AppData\Local\Temp\3753745a-96ee-424b-bf39-441977d9a08f\a61d1e67
Ptotal=106.74 mm	Comments: 100yr 24hr 15min SCS Type II (MTO)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.92	12.50	15.37	18.75	1.92
0.25	1.17	6.50	1.92	12.75	7.90	19.00	1.92
0.50	1.17	6.75	1.92	13.00	7.90	19.25	1.92
0.75	1.17	7.00	1.92	13.25	5.76	19.50	1.92
1.00	1.17	7.25	2.35	13.50	5.76	19.75	1.92
1.25	1.17	7.50	2.35	13.75	4.48	20.00	1.92
1.50	1.17	7.75	2.35	14.00	4.48	20.25	1.28
1.75	1.17	8.00	2.35	14.25	3.20	20.50	1.28
2.00	1.17	8.25	2.78	14.50	3.20	20.75	1.28
2.25	1.39	8.50	2.78	14.75	3.20	21.00	1.28
2.50	1.39	8.75	2.99	15.00	3.20	21.25	1.28
2.75	1.39	9.00	2.99	15.25	3.20	21.50	1.28
3.00	1.39	9.25	3.42	15.50	3.20	21.75	1.28
3.25	1.39	9.50	3.42	15.75	3.20	22.00	1.28
3.50	1.39	9.75	3.84	16.00	3.20	22.25	1.28
3.75	1.39	10.00	3.84	16.25	1.92	22.50	1.28
4.00	1.39	10.25	4.91	16.50	1.92	22.75	1.28
4.25	1.71	10.50	4.91	16.75	1.92	23.00	1.28
4.50	1.71	10.75	6.62	17.00	1.92	23.25	1.28
4.75	1.71	11.00	6.62	17.25	1.92	23.50	1.28
5.00	1.71	11.25	10.25	17.50	1.92	23.75	1.28
5.25	1.71	11.50	10.25	17.75	1.92	24.00	1.28
5.50	1.71	11.75	31.60	18.00	1.92		
5.75	1.71	12.00	130.65	18.25	1.92		
6.00	1.71	12.25	15.37	18.50	1.92		

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| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   0.09
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
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                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.05         0.05
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      24.49        15.00
     Mannings n             =     0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.017    0.00 | 6.083    1.71 |12.150  130.65 | 18.22    1.92
               0.033    0.00 | 6.100    1.71 |12.167  130.65 | 18.23    1.92
               0.050    0.00 | 6.117    1.71 |12.183  130.65 | 18.25    1.92
               0.067    0.00 | 6.133    1.71 |12.200  130.65 | 18.27    1.92
               0.083    0.00 | 6.150    1.71 |12.217  130.65 | 18.28    1.92
               0.100    0.00 | 6.167    1.71 |12.233  130.65 | 18.30    1.92
               0.117    0.00 | 6.183    1.71 |12.250  130.65 | 18.32    1.92
               0.133    0.00 | 6.200    1.71 |12.267   15.48 | 18.33    1.92
               0.150    0.00 | 6.217    1.71 |12.283   15.37 | 18.35    1.92
               0.167    0.00 | 6.233    1.71 |12.300   15.37 | 18.37    1.92
               0.183    0.00 | 6.250    1.71 |12.317   15.37 | 18.38    1.92
               0.200    0.00 | 6.267    1.92 |12.333   15.37 | 18.40    1.92
               0.217    0.00 | 6.283    1.92 |12.350   15.37 | 18.42    1.92
               0.233    0.00 | 6.300    1.92 |12.367   15.37 | 18.43    1.92
               0.250    0.00 | 6.317    1.92 |12.383   15.37 | 18.45    1.92
               0.267    1.17 | 6.333    1.92 |12.400   15.37 | 18.47    1.92
               0.283    1.17 | 6.350    1.92 |12.417   15.37 | 18.48    1.92
               0.300    1.17 | 6.367    1.92 |12.433   15.37 | 18.50    1.92
               0.317    1.17 | 6.383    1.92 |12.450   15.37 | 18.52    1.92
               0.333    1.17 | 6.400    1.92 |12.467   15.37 | 18.53    1.92
               0.350    1.17 | 6.417    1.92 |12.483   15.37 | 18.55    1.92
               0.367    1.17 | 6.433    1.92 |12.500   15.37 | 18.57    1.92
               0.383    1.17 | 6.450    1.92 |12.517   15.37 | 18.58    1.92
               0.400    1.17 | 6.467    1.92 |12.533   15.37 | 18.60    1.92
               0.417    1.17 | 6.483    1.92 |12.550   15.37 | 18.62    1.92
               0.433    1.17 | 6.500    1.92 |12.567   15.37 | 18.63    1.92
               0.450    1.17 | 6.517    1.92 |12.583   15.37 | 18.65    1.92
               0.467    1.17 | 6.533    1.92 |12.600   15.37 | 18.67    1.92
               0.483    1.17 | 6.550    1.92 |12.617   15.37 | 18.68    1.92
               0.500    1.17 | 6.567    1.92 |12.633   15.37 | 18.70    1.92
               0.517    1.17 | 6.583    1.92 |12.650   15.37 | 18.72    1.92
               0.533    1.17 | 6.600    1.92 |12.667   15.37 | 18.73    1.92
               0.550    1.17 | 6.617    1.92 |12.683   15.37 | 18.75    1.92
               0.567    1.17 | 6.633    1.92 |12.700   15.37 | 18.77    1.92
               0.583    1.17 | 6.650    1.92 |12.717   15.37 | 18.78    1.92
               0.600    1.17 | 6.667    1.92 |12.733   15.37 | 18.80    1.92
               0.617    1.17 | 6.683    1.92 |12.750   15.37 | 18.82    1.92
               0.633    1.17 | 6.700    1.92 |12.767    7.91 | 18.83    1.92
               0.650    1.17 | 6.717    1.92 |12.783    7.90 | 18.85    1.92
               0.667    1.17 | 6.733    1.92 |12.800    7.90 | 18.87    1.92
               0.683    1.17 | 6.750    1.92 |12.817    7.90 | 18.88    1.92
               0.700    1.17 | 6.767    1.92 |12.833    7.90 | 18.90    1.92
               0.717    1.17 | 6.783    1.92 |12.850    7.90 | 18.92    1.92
               0.733    1.17 | 6.800    1.92 |12.867    7.90 | 18.93    1.92
               0.750    1.17 | 6.817    1.92 |12.883    7.90 | 18.95    1.92
               0.767    1.17 | 6.833    1.92 |12.900    7.90 | 18.97    1.92
               0.783    1.17 | 6.850    1.92 |12.917    7.90 | 18.98    1.92
               0.800    1.17 | 6.867    1.92 |12.933    7.90 | 19.00    1.92
               0.817    1.17 | 6.883    1.92 |12.950    7.90 | 19.02    1.92
               0.833    1.17 | 6.900    1.92 |12.967    7.90 | 19.03    1.92
               0.850    1.17 | 6.917    1.92 |12.983    7.90 | 19.05    1.92
               0.867    1.17 | 6.933    1.92 |13.000    7.90 | 19.07    1.92
               0.883    1.17 | 6.950    1.92 |13.017    7.90 | 19.08    1.92
               0.900    1.17 | 6.967    1.92 |13.033    7.90 | 19.10    1.92
               0.917    1.17 | 6.983    1.92 |13.050    7.90 | 19.12    1.92
               0.933    1.17 | 7.000    1.92 |13.067    7.90 | 19.13    1.92
               0.950    1.17 | 7.017    1.92 |13.083    7.90 | 19.15    1.92
               0.967    1.17 | 7.033    1.92 |13.100    7.90 | 19.17    1.92
               0.983    1.17 | 7.050    1.92 |13.117    7.90 | 19.18    1.92
               1.000    1.17 | 7.067    1.92 |13.133    7.90 | 19.20    1.92
               1.017    1.17 | 7.083    1.92 |13.150    7.90 | 19.22    1.92
               1.033    1.17 | 7.100    1.92 |13.167    7.90 | 19.23    1.92
               1.050    1.17 | 7.117    1.92 |13.183    7.90 | 19.25    1.92
               1.067    1.17 | 7.133    1.92 |13.200    7.90 | 19.27    1.92
               1.083    1.17 | 7.150    1.92 |13.217    7.90 | 19.28    1.92
               1.100    1.17 | 7.167    1.92 |13.233    7.90 | 19.30    1.92
               1.117    1.17 | 7.183    1.92 |13.250    7.90 | 19.32    1.92
               1.133    1.17 | 7.200    1.92 |13.267    5.77 | 19.33    1.92
               1.150    1.17 | 7.217    1.92 |13.283    5.76 | 19.35    1.92
               1.167    1.17 | 7.233    1.92 |13.300    5.76 | 19.37    1.92
               1.183    1.17 | 7.250    1.92 |13.317    5.76 | 19.38    1.92
               1.200    1.17 | 7.267    2.35 |13.333    5.76 | 19.40    1.92
               1.217    1.17 | 7.283    2.35 |13.350    5.76 | 19.42    1.92
               1.233    1.17 | 7.300    2.35 |13.367    5.76 | 19.43    1.92
               1.250    1.17 | 7.317    2.35 |13.383    5.76 | 19.45    1.92
               1.267    1.17 | 7.333    2.35 |13.400    5.76 | 19.47    1.92
               1.283    1.17 | 7.350    2.35 |13.417    5.76 | 19.48    1.92
               1.300    1.17 | 7.367    2.35 |13.433    5.76 | 19.50    1.92
               1.317    1.17 | 7.383    2.35 |13.450    5.76 | 19.52    1.92
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1.333	1.17	7.400	2.35	13.467	5.76	19.53	1.92
1.350	1.17	7.417	2.35	13.483	5.76	19.55	1.92
1.367	1.17	7.433	2.35	13.500	5.76	19.57	1.92
1.383	1.17	7.450	2.35	13.517	5.76	19.58	1.92
1.400	1.17	7.467	2.35	13.533	5.76	19.60	1.92
1.417	1.17	7.483	2.35	13.550	5.76	19.62	1.92
1.433	1.17	7.500	2.35	13.567	5.76	19.63	1.92
1.450	1.17	7.517	2.35	13.583	5.76	19.65	1.92
1.467	1.17	7.533	2.35	13.600	5.76	19.67	1.92
1.483	1.17	7.550	2.35	13.617	5.76	19.68	1.92
1.500	1.17	7.567	2.35	13.633	5.76	19.70	1.92
1.517	1.17	7.583	2.35	13.650	5.76	19.72	1.92
1.533	1.17	7.600	2.35	13.667	5.76	19.73	1.92
1.550	1.17	7.617	2.35	13.683	5.76	19.75	1.92
1.567	1.17	7.633	2.35	13.700	5.76	19.77	1.92
1.583	1.17	7.650	2.35	13.717	5.76	19.78	1.92
1.600	1.17	7.667	2.35	13.733	5.76	19.80	1.92
1.617	1.17	7.683	2.35	13.750	5.76	19.82	1.92
1.633	1.17	7.700	2.35	13.767	4.49	19.83	1.92
1.650	1.17	7.717	2.35	13.783	4.48	19.85	1.92
1.667	1.17	7.733	2.35	13.800	4.48	19.87	1.92
1.683	1.17	7.750	2.35	13.817	4.48	19.88	1.92
1.700	1.17	7.767	2.35	13.833	4.48	19.90	1.92
1.717	1.17	7.783	2.35	13.850	4.48	19.92	1.92
1.733	1.17	7.800	2.35	13.867	4.48	19.93	1.92
1.750	1.17	7.817	2.35	13.883	4.48	19.95	1.92
1.767	1.17	7.833	2.35	13.900	4.48	19.97	1.92
1.783	1.17	7.850	2.35	13.917	4.48	19.98	1.92
1.800	1.17	7.867	2.35	13.933	4.48	20.00	1.92
1.817	1.17	7.883	2.35	13.950	4.48	20.02	1.92
1.833	1.17	7.900	2.35	13.967	4.48	20.03	1.92
1.850	1.17	7.917	2.35	13.983	4.48	20.05	1.92
1.867	1.17	7.933	2.35	14.000	4.48	20.07	1.92
1.883	1.17	7.950	2.35	14.017	4.48	20.08	1.92
1.900	1.17	7.967	2.35	14.033	4.48	20.10	1.92
1.917	1.17	7.983	2.35	14.050	4.48	20.12	1.92
1.933	1.17	8.000	2.35	14.067	4.48	20.13	1.92
1.950	1.17	8.017	2.35	14.083	4.48	20.15	1.92
1.967	1.17	8.033	2.35	14.100	4.48	20.17	1.92
1.983	1.17	8.050	2.35	14.117	4.48	20.18	1.92
2.000	1.17	8.067	2.35	14.133	4.48	20.20	1.92
2.017	1.17	8.083	2.35	14.150	4.48	20.22	1.92
2.033	1.17	8.100	2.35	14.167	4.48	20.23	1.92
2.050	1.17	8.117	2.35	14.183	4.48	20.25	1.92
2.067	1.17	8.133	2.35	14.200	4.48	20.27	1.29
2.083	1.17	8.150	2.35	14.217	4.48	20.28	1.28
2.100	1.17	8.167	2.35	14.233	4.48	20.30	1.28
2.117	1.17	8.183	2.35	14.250	4.48	20.32	1.28
2.133	1.17	8.200	2.35	14.267	3.21	20.33	1.28
2.150	1.17	8.217	2.35	14.283	3.20	20.35	1.28
2.167	1.17	8.233	2.35	14.300	3.20	20.37	1.28
2.183	1.17	8.250	2.35	14.317	3.20	20.38	1.28
2.200	1.17	8.267	2.78	14.333	3.20	20.40	1.28
2.217	1.17	8.283	2.78	14.350	3.20	20.42	1.28
2.233	1.17	8.300	2.78	14.367	3.20	20.43	1.28
2.250	1.17	8.317	2.78	14.383	3.20	20.45	1.28
2.267	1.39	8.333	2.78	14.400	3.20	20.47	1.28
2.283	1.39	8.350	2.78	14.417	3.20	20.48	1.28
2.300	1.39	8.367	2.78	14.433	3.20	20.50	1.28
2.317	1.39	8.383	2.78	14.450	3.20	20.52	1.28
2.333	1.39	8.400	2.78	14.467	3.20	20.53	1.28
2.350	1.39	8.417	2.78	14.483	3.20	20.55	1.28
2.367	1.39	8.433	2.78	14.500	3.20	20.57	1.28
2.383	1.39	8.450	2.78	14.517	3.20	20.58	1.28
2.400	1.39	8.467	2.78	14.533	3.20	20.60	1.28
2.417	1.39	8.483	2.78	14.550	3.20	20.62	1.28
2.433	1.39	8.500	2.78	14.567	3.20	20.63	1.28
2.450	1.39	8.517	2.78	14.583	3.20	20.65	1.28
2.467	1.39	8.533	2.78	14.600	3.20	20.67	1.28
2.483	1.39	8.550	2.78	14.617	3.20	20.68	1.28
2.500	1.39	8.567	2.78	14.633	3.20	20.70	1.28
2.517	1.39	8.583	2.78	14.650	3.20	20.72	1.28
2.533	1.39	8.600	2.78	14.667	3.20	20.73	1.28
2.550	1.39	8.617	2.78	14.683	3.20	20.75	1.28
2.567	1.39	8.633	2.78	14.700	3.20	20.77	1.28
2.583	1.39	8.650	2.78	14.717	3.20	20.78	1.28
2.600	1.39	8.667	2.78	14.733	3.20	20.80	1.28
2.617	1.39	8.683	2.78	14.750	3.20	20.82	1.28
2.633	1.39	8.700	2.78	14.767	3.20	20.83	1.28
2.650	1.39	8.717	2.78	14.783	3.20	20.85	1.28
2.667	1.39	8.733	2.78	14.800	3.20	20.87	1.28
2.683	1.39	8.750	2.78	14.817	3.20	20.88	1.28
2.700	1.39	8.767	2.99	14.833	3.20	20.90	1.28
2.717	1.39	8.783	2.99	14.850	3.20	20.92	1.28
2.733	1.39	8.800	2.99	14.867	3.20	20.93	1.28
2.750	1.39	8.817	2.99	14.883	3.20	20.95	1.28
2.767	1.39	8.833	2.99	14.900	3.20	20.97	1.28
2.783	1.39	8.850	2.99	14.917	3.20	20.98	1.28
2.800	1.39	8.867	2.99	14.933	3.20	21.00	1.28
2.817	1.39	8.883	2.99	14.950	3.20	21.02	1.28
2.833	1.39	8.900	2.99	14.967	3.20	21.03	1.28
2.850	1.39	8.917	2.99	14.983	3.20	21.05	1.28
2.867	1.39	8.933	2.99	15.000	3.20	21.07	1.28
2.883	1.39	8.950	2.99	15.017	3.20	21.08	1.28
2.900	1.39	8.967	2.99	15.033	3.20	21.10	1.28
2.917	1.39	8.983	2.99	15.050	3.20	21.12	1.28
2.933	1.39	9.000	2.99	15.067	3.20	21.13	1.28
2.950	1.39	9.017	2.99	15.083	3.20	21.15	1.28
2.967	1.39	9.033	2.99	15.100	3.20	21.17	1.28
2.983	1.39	9.050	2.99	15.117	3.20	21.18	1.28

3.000	1.39	9.067	2.99	15.133	3.20	21.20	1.28
3.017	1.39	9.083	2.99	15.150	3.20	21.22	1.28
3.033	1.39	9.100	2.99	15.167	3.20	21.23	1.28
3.050	1.39	9.117	2.99	15.183	3.20	21.25	1.28
3.067	1.39	9.133	2.99	15.200	3.20	21.27	1.28
3.083	1.39	9.150	2.99	15.217	3.20	21.28	1.28
3.100	1.39	9.167	2.99	15.233	3.20	21.30	1.28
3.117	1.39	9.183	2.99	15.250	3.20	21.32	1.28
3.133	1.39	9.200	2.99	15.267	3.20	21.33	1.28
3.150	1.39	9.217	2.99	15.283	3.20	21.35	1.28
3.167	1.39	9.233	2.99	15.300	3.20	21.37	1.28
3.183	1.39	9.250	2.99	15.317	3.20	21.38	1.28
3.200	1.39	9.267	3.42	15.333	3.20	21.40	1.28
3.217	1.39	9.283	3.42	15.350	3.20	21.42	1.28
3.233	1.39	9.300	3.42	15.367	3.20	21.43	1.28
3.250	1.39	9.317	3.42	15.383	3.20	21.45	1.28
3.267	1.39	9.333	3.42	15.400	3.20	21.47	1.28
3.283	1.39	9.350	3.42	15.417	3.20	21.48	1.28
3.300	1.39	9.367	3.42	15.433	3.20	21.50	1.28
3.317	1.39	9.383	3.42	15.450	3.20	21.52	1.28
3.333	1.39	9.400	3.42	15.467	3.20	21.53	1.28
3.350	1.39	9.417	3.42	15.483	3.20	21.55	1.28
3.367	1.39	9.433	3.42	15.500	3.20	21.57	1.28
3.383	1.39	9.450	3.42	15.517	3.20	21.58	1.28
3.400	1.39	9.467	3.42	15.533	3.20	21.60	1.28
3.417	1.39	9.483	3.42	15.550	3.20	21.62	1.28
3.433	1.39	9.500	3.42	15.567	3.20	21.63	1.28
3.450	1.39	9.517	3.42	15.583	3.20	21.65	1.28
3.467	1.39	9.533	3.42	15.600	3.20	21.67	1.28
3.483	1.39	9.550	3.42	15.617	3.20	21.68	1.28
3.500	1.39	9.567	3.42	15.633	3.20	21.70	1.28
3.517	1.39	9.583	3.42	15.650	3.20	21.72	1.28
3.533	1.39	9.600	3.42	15.667	3.20	21.73	1.28
3.550	1.39	9.617	3.42	15.683	3.20	21.75	1.28
3.567	1.39	9.633	3.42	15.700	3.20	21.77	1.28
3.583	1.39	9.650	3.42	15.717	3.20	21.78	1.28
3.600	1.39	9.667	3.42	15.733	3.20	21.80	1.28
3.617	1.39	9.683	3.42	15.750	3.20	21.82	1.28
3.633	1.39	9.700	3.42	15.767	3.20	21.83	1.28
3.650	1.39	9.717	3.42	15.783	3.20	21.85	1.28
3.667	1.39	9.733	3.42	15.800	3.20	21.87	1.28
3.683	1.39	9.750	3.42	15.817	3.20	21.88	1.28
3.700	1.39	9.767	3.84	15.833	3.20	21.90	1.28
3.717	1.39	9.783	3.84	15.850	3.20	21.92	1.28
3.733	1.39	9.800	3.84	15.867	3.20	21.93	1.28
3.750	1.39	9.817	3.84	15.883	3.20	21.95	1.28
3.767	1.39	9.833	3.84	15.900	3.20	21.97	1.28
3.783	1.39	9.850	3.84	15.917	3.20	21.98	1.28
3.800	1.39	9.867	3.84	15.933	3.20	22.00	1.28
3.817	1.39	9.883	3.84	15.950	3.20	22.02	1.28
3.833	1.39	9.900	3.84	15.967	3.20	22.03	1.28
3.850	1.39	9.917	3.84	15.983	3.20	22.05	1.28
3.867	1.39	9.933	3.84	16.000	3.20	22.07	1.28
3.883	1.39	9.950	3.84	16.017	3.20	22.08	1.28
3.900	1.39	9.967	3.84	16.033	3.20	22.10	1.28
3.917	1.39	9.983	3.84	16.050	3.20	22.12	1.28
3.933	1.39	10.000	3.84	16.067	3.20	22.13	1.28
3.950	1.39	10.017	3.84	16.083	3.20	22.15	1.28
3.967	1.39	10.033	3.84	16.100	3.20	22.17	1.28
3.983	1.39	10.050	3.84	16.117	3.20	22.18	1.28
4.000	1.39	10.067	3.84	16.133	3.20	22.20	1.28
4.017	1.39	10.083	3.84	16.150	3.20	22.22	1.28
4.033	1.39	10.100	3.84	16.167	3.20	22.23	1.28
4.050	1.39	10.117	3.84	16.183	3.20	22.25	1.28
4.067	1.39	10.133	3.84	16.200	3.20	22.27	1.28
4.083	1.39	10.150	3.84	16.217	3.20	22.28	1.28
4.100	1.39	10.167	3.84	16.233	3.20	22.30	1.28
4.117	1.39	10.183	3.84	16.250	3.20	22.32	1.28
4.133	1.39	10.200	3.84	16.267	1.93	22.33	1.28
4.150	1.39	10.217	3.84	16.283	1.92	22.35	1.28
4.167	1.39	10.233	3.84	16.300	1.92	22.37	1.28
4.183	1.39	10.250	3.84	16.317	1.92	22.38	1.28
4.200	1.39	10.267	4.91	16.333	1.92	22.40	1.28
4.217	1.39	10.283	4.91	16.350	1.92	22.42	1.28
4.233	1.39	10.300	4.91	16.367	1.92	22.43	1.28
4.250	1.39	10.317	4.91	16.383	1.92	22.45	1.28
4.267	1.71	10.333	4.91	16.400	1.92	22.47	1.28
4.283	1.71	10.350	4.91	16.417	1.92	22.48	1.28
4.300	1.71	10.367	4.91	16.433	1.92	22.50	1.28
4.317	1.71	10.383	4.91	16.450	1.92	22.52	1.28
4.333	1.71	10.400	4.91	16.467	1.92	22.53	1.28
4.350	1.71	10.417	4.91	16.483	1.92	22.55	1.28
4.367	1.71	10.433	4.91	16.500	1.92	22.57	1.28
4.383	1.71	10.450	4.91	16.517	1.92	22.58	1.28
4.400	1.71	10.467	4.91	16.533	1.92	22.60	1.28
4.417	1.71	10.483	4.91	16.550	1.92	22.62	1.28
4.433	1.71	10.500	4.91	16.567	1.92	22.63	1.28
4.450	1.71	10.517	4.91	16.583	1.92	22.65	1.28
4.467	1.71	10.533	4.91	16.600	1.92	22.67	1.28
4.483	1.71	10.550	4.91	16.617	1.92	22.68	1.28
4.500	1.71	10.567	4.91	16.633	1.92	22.70	1.28
4.517	1.71	10.583	4.91	16.650	1.92	22.72	1.28
4.533	1.71	10.600	4.91	16.667	1.92	22.73	1.28
4.550	1.71	10.617	4.91	16.683	1.92	22.75	1.28
4.567	1.71	10.633	4.91	16.700	1.92	22.77	1.28
4.583	1.71	10.650	4.91	16.717	1.92	22.78	1.28
4.600	1.71	10.667	4.91	16.733	1.92	22.80	1.28
4.617	1.71	10.683	4.91	16.750	1.92	22.82	1.28
4.633	1.71	10.700	4.91	16.767	1.92	22.83	1.28
4.650	1.71	10.717	4.91	16.783	1.92	22.85	1.28

4.667	1.71	10.733	4.91	16.800	1.92	22.87	1.28
4.683	1.71	10.750	4.91	16.817	1.92	22.88	1.28
4.700	1.71	10.767	6.62	16.833	1.92	22.90	1.28
4.717	1.71	10.783	6.62	16.850	1.92	22.92	1.28
4.733	1.71	10.800	6.62	16.867	1.92	22.93	1.28
4.750	1.71	10.817	6.62	16.883	1.92	22.95	1.28
4.767	1.71	10.833	6.62	16.900	1.92	22.97	1.28
4.783	1.71	10.850	6.62	16.917	1.92	22.98	1.28
4.800	1.71	10.867	6.62	16.933	1.92	23.00	1.28
4.817	1.71	10.883	6.62	16.950	1.92	23.02	1.28
4.833	1.71	10.900	6.62	16.967	1.92	23.03	1.28
4.850	1.71	10.917	6.62	16.983	1.92	23.05	1.28
4.867	1.71	10.933	6.62	17.000	1.92	23.07	1.28
4.883	1.71	10.950	6.62	17.017	1.92	23.08	1.28
4.900	1.71	10.967	6.62	17.033	1.92	23.10	1.28
4.917	1.71	10.983	6.62	17.050	1.92	23.12	1.28
4.933	1.71	11.000	6.62	17.067	1.92	23.13	1.28
4.950	1.71	11.017	6.62	17.083	1.92	23.15	1.28
4.967	1.71	11.033	6.62	17.100	1.92	23.17	1.28
4.983	1.71	11.050	6.62	17.117	1.92	23.18	1.28
5.000	1.71	11.067	6.62	17.133	1.92	23.20	1.28
5.017	1.71	11.083	6.62	17.150	1.92	23.22	1.28
5.033	1.71	11.100	6.62	17.167	1.92	23.23	1.28
5.050	1.71	11.117	6.62	17.183	1.92	23.25	1.28
5.067	1.71	11.133	6.62	17.200	1.92	23.27	1.28
5.083	1.71	11.150	6.62	17.217	1.92	23.28	1.28
5.100	1.71	11.167	6.62	17.233	1.92	23.30	1.28
5.117	1.71	11.183	6.62	17.250	1.92	23.32	1.28
5.133	1.71	11.200	6.62	17.267	1.92	23.33	1.28
5.150	1.71	11.217	6.62	17.283	1.92	23.35	1.28
5.167	1.71	11.233	6.62	17.300	1.92	23.37	1.28
5.183	1.71	11.250	6.62	17.317	1.92	23.38	1.28
5.200	1.71	11.267	10.25	17.333	1.92	23.40	1.28
5.217	1.71	11.283	10.25	17.350	1.92	23.42	1.28
5.233	1.71	11.300	10.25	17.367	1.92	23.43	1.28
5.250	1.71	11.317	10.25	17.383	1.92	23.45	1.28
5.267	1.71	11.333	10.25	17.400	1.92	23.47	1.28
5.283	1.71	11.350	10.25	17.417	1.92	23.48	1.28
5.300	1.71	11.367	10.25	17.433	1.92	23.50	1.28
5.317	1.71	11.383	10.25	17.450	1.92	23.52	1.28
5.333	1.71	11.400	10.25	17.467	1.92	23.53	1.28
5.350	1.71	11.417	10.25	17.483	1.92	23.55	1.28
5.367	1.71	11.433	10.25	17.500	1.92	23.57	1.28
5.383	1.71	11.450	10.25	17.517	1.92	23.58	1.28
5.400	1.71	11.467	10.25	17.533	1.92	23.60	1.28
5.417	1.71	11.483	10.25	17.550	1.92	23.62	1.28
5.433	1.71	11.500	10.25	17.567	1.92	23.63	1.28
5.450	1.71	11.517	10.25	17.583	1.92	23.65	1.28
5.467	1.71	11.533	10.25	17.600	1.92	23.67	1.28
5.483	1.71	11.550	10.25	17.617	1.92	23.68	1.28
5.500	1.71	11.567	10.25	17.633	1.92	23.70	1.28
5.517	1.71	11.583	10.25	17.650	1.92	23.72	1.28
5.533	1.71	11.600	10.25	17.667	1.92	23.73	1.28
5.550	1.71	11.617	10.25	17.683	1.92	23.75	1.28
5.567	1.71	11.633	10.25	17.700	1.92	23.77	1.28
5.583	1.71	11.650	10.25	17.717	1.92	23.78	1.28
5.600	1.71	11.667	10.25	17.733	1.92	23.80	1.28
5.617	1.71	11.683	10.25	17.750	1.92	23.82	1.28
5.633	1.71	11.700	10.25	17.767	1.92	23.83	1.28
5.650	1.71	11.717	10.25	17.783	1.92	23.85	1.28
5.667	1.71	11.733	10.25	17.800	1.92	23.87	1.28
5.683	1.71	11.750	10.25	17.817	1.92	23.88	1.28
5.700	1.71	11.767	31.58	17.833	1.92	23.90	1.28
5.717	1.71	11.783	31.60	17.850	1.92	23.92	1.28
5.733	1.71	11.800	31.60	17.867	1.92	23.93	1.28
5.750	1.71	11.817	31.60	17.883	1.92	23.95	1.28
5.767	1.71	11.833	31.60	17.900	1.92	23.97	1.28
5.783	1.71	11.850	31.60	17.917	1.92	23.98	1.28
5.800	1.71	11.867	31.60	17.933	1.92	24.00	1.28
5.817	1.71	11.883	31.60	17.950	1.92	24.02	1.28
5.833	1.71	11.900	31.60	17.967	1.92	24.03	1.28
5.850	1.71	11.917	31.60	17.983	1.92	24.05	1.28
5.867	1.71	11.933	31.60	18.000	1.92	24.07	1.28
5.883	1.71	11.950	31.60	18.017	1.92	24.08	1.28
5.900	1.71	11.967	31.60	18.033	1.92	24.10	1.28
5.917	1.71	11.983	31.60	18.050	1.92	24.12	1.28
5.933	1.71	12.000	31.60	18.067	1.92	24.13	1.28
5.950	1.71	12.017	130.58	18.083	1.92	24.15	1.28
5.967	1.71	12.033	130.65	18.100	1.92	24.17	1.28
5.983	1.71	12.050	130.65	18.117	1.92	24.18	1.28
6.000	1.71	12.067	130.65	18.133	1.92	24.20	1.28
6.017	1.71	12.083	130.65	18.150	1.92	24.22	1.28
6.033	1.71	12.100	130.65	18.167	1.92	24.23	1.28
6.050	1.71	12.117	130.65	18.183	1.92	24.25	1.28
6.067	1.71	12.133	130.65	18.200	1.92		

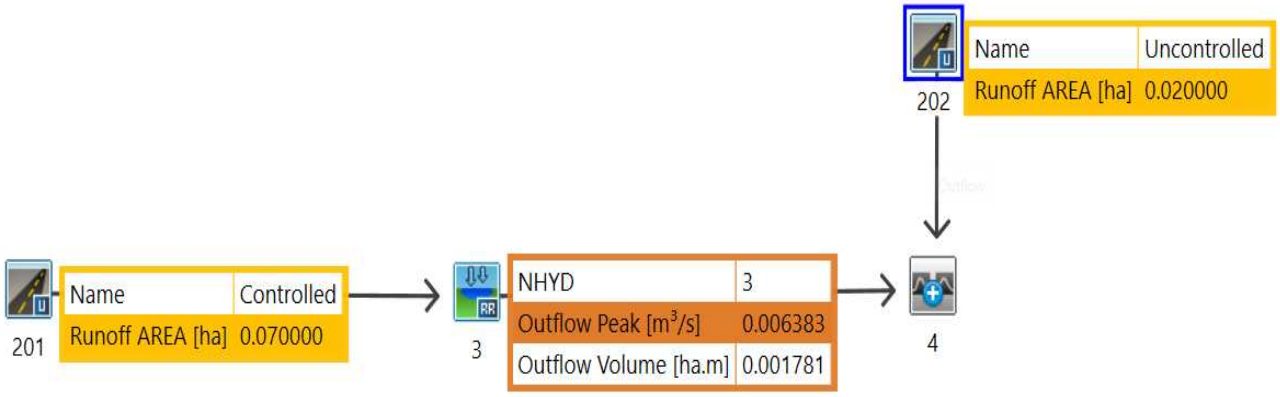
Max.Eff.Inten.(mm/hr)=	130.65	38.54	
over (min)	5.00	5.00	
Storage Coeff. (min)=	0.80 (ii)	4.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.50	0.25	
			TOTALS
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	12.23	12.27	12.25
RUNOFF VOLUME (mm)=	104.74	26.67	65.69
TOTAL RAINFALL (mm)=	106.74	106.74	106.74
RUNOFF COEFFICIENT =	0.98	0.25	0.62

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Appendix E

Post-Development Visual OTTHYMO Modeling



```
**********************************
** SIMULATION:01- 2yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.004     1.33    31.31
     + ID2= 2 (  0003):     0.07   0.006     1.40    25.45
       ================================================
       ID = 3 (  0004):     0.09   0.010     1.35    26.75

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
**********************************
** SIMULATION:02- 5yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.006     1.33    43.74
     + ID2= 2 (  0003):     0.07   0.008     1.42    35.59
       ================================================
       ID = 3 (  0004):     0.09   0.013     1.35    37.40

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
**********************************
** SIMULATION:03- 10yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.007     1.33    48.94
     + ID2= 2 (  0003):     0.07   0.009     1.42    39.96
       ================================================
       ID = 3 (  0004):     0.09   0.014     1.35    41.95

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
**********************************
** SIMULATION:04- 25yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.008     1.33    58.90
     + ID2= 2 (  0003):     0.07   0.010     1.42    48.39
       ================================================
       ID = 3 (  0004):     0.09   0.017     1.35    50.73

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
**********************************
** SIMULATION:05- 50yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.009     1.33    66.15
     + ID2= 2 (  0003):     0.07   0.011     1.42    54.59
       ================================================
       ID = 3 (  0004):     0.09   0.018     1.35    57.16

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
**********************************
** SIMULATION:06- 100yr-4hr Chicago **
**********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.010     1.33    73.38
     + ID2= 2 (  0003):     0.07   0.011     1.42    60.81
       ================================================
       ID = 3 (  0004):     0.09   0.020     1.35    63.61

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
*********************************
** SIMULATION:07- 2yr-24hr SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.003    12.25    37.40
     + ID2= 2 (  0003):     0.07   0.006    12.30    35.59
```

```
       ================================================
       ID = 3 (  0004):     0.09   0.009    12.25    35.99

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
*********************************
** SIMULATION:08- 5yr-24hr-SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.004    12.25    55.58
     + ID2= 2 (  0003):     0.07   0.008    12.32    52.27
       ================================================
       ID = 3 (  0004):     0.09   0.012    12.25    53.01

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
*********************************
** SIMULATION:09- 10yr-24hr-SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.005    12.25    61.03
     + ID2= 2 (  0003):     0.07   0.008    12.32    57.56
       ================================================
       ID = 3 (  0004):     0.09   0.013    12.25    58.33

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
*********************************
** SIMULATION:10- 25yr-24hr-SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.006    12.25    73.36
     + ID2= 2 (  0003):     0.07   0.009    12.32    69.68
       ================================================
       ID = 3 (  0004):     0.09   0.015    12.25    70.50

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

```
*********************************
** SIMULATION:11- 50yr-24hr-SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.007    12.25    82.33
     + ID2= 2 (  0003):     0.07   0.010    12.32    78.60
       ================================================
       ID = 3 (  0004):     0.09   0.016    12.25    79.43

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
*********************************
** SIMULATION:12- 100yr-24hr-SCS **
*********************************

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     0.02   0.007    12.25    98.81
     + ID2= 2 (  0003):     0.07   0.011    12.32    87.55
       ================================================
       ID = 3 (  0004):     0.09   0.017    12.25    90.05

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

POST DEVELOPMENT 100 YEAR SCS STORM EVENT RESULTS

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

       V    V   I    SSSSS  U   U    A    L             (v 6.3.2000)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.3\VO2\voin.dat

  Output  filename:
C:\Users\sthakkar\AppData\Local\VO\3374beae-d628-43a4-bd2b-8bd6d8c35f6a\691c38f2-f
d93-4a43-a059-bc51d1869b05\scenariodet
  Summary filename:
C:\Users\sthakkar\AppData\Local\VO\3374beae-d628-43a4-bd2b-8bd6d8c35f6a\691c38f2-f
d93-4a43-a059-bc51d1869b05\scenariosum


DATE: 11-13-2026                          TIME: 05:16:44

USER:



COMMENTS: _____________________________________________________________


--------------------------------------------------------------------------------
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  ***********************************************
  ** SIMULATION : 12- 100yr-24hr-SCS           **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\sthakkar\AppD
|                  |              ata\Local\Temp\
|                  |              e49fccd6-f332-4365-aff2-b0c93f07fc17\a61d1e67
| Ptotal=106.74 mm |    Comments: 100yr 24hr 15min SCS Type II (MTO)
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.92	12.50	15.37	18.75	1.92
0.25	1.17	6.50	1.92	12.75	7.90	19.00	1.92
0.50	1.17	6.75	1.92	13.00	7.90	19.25	1.92
0.75	1.17	7.00	1.92	13.25	5.76	19.50	1.92
1.00	1.17	7.25	2.35	13.50	5.76	19.75	1.92
1.25	1.17	7.50	2.35	13.75	4.48	20.00	1.92
1.50	1.17	7.75	2.35	14.00	4.48	20.25	1.28
1.75	1.17	8.00	2.35	14.25	3.20	20.50	1.28
2.00	1.17	8.25	2.78	14.50	3.20	20.75	1.28
2.25	1.39	8.50	2.78	14.75	3.20	21.00	1.28
2.50	1.39	8.75	2.99	15.00	3.20	21.25	1.28
2.75	1.39	9.00	2.99	15.25	3.20	21.50	1.28
3.00	1.39	9.25	3.42	15.50	3.20	21.75	1.28
3.25	1.39	9.50	3.42	15.75	3.20	22.00	1.28
3.50	1.39	9.75	3.84	16.00	3.20	22.25	1.28
3.75	1.39	10.00	3.84	16.25	1.92	22.50	1.28
4.00	1.39	10.25	4.91	16.50	1.92	22.75	1.28
4.25	1.71	10.50	4.91	16.75	1.92	23.00	1.28
4.50	1.71	10.75	6.62	17.00	1.92	23.25	1.28
4.75	1.71	11.00	6.62	17.25	1.92	23.50	1.28
5.00	1.71	11.25	10.25	17.50	1.92	23.75	1.28
5.25	1.71	11.50	10.25	17.75	1.92	24.00	1.28
5.50	1.71	11.75	31.60	18.00	1.92		
5.75	1.71	12.00	130.65	18.25	1.92		
6.00	1.71	12.25	15.37	18.50	1.92		

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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   0.07
|ID= 1 DT= 1.0 min |   Total Imp(%)=  78.00   Dir. Conn.(%)=  78.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.05          0.02
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      21.60         15.00
     Mannings n           =      0.013         0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


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

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	0.00	6.083	1.71	12.150	130.65	18.22	1.92
0.033	0.00	6.100	1.71	12.167	130.65	18.23	1.92
0.050	0.00	6.117	1.71	12.183	130.65	18.25	1.92
0.067	0.00	6.133	1.71	12.200	130.65	18.27	1.92
0.083	0.00	6.150	1.71	12.217	130.65	18.28	1.92
0.100	0.00	6.167	1.71	12.233	130.65	18.30	1.92
0.117	0.00	6.183	1.71	12.250	130.65	18.32	1.92
0.133	0.00	6.200	1.71	12.267	15.48	18.33	1.92
0.150	0.00	6.217	1.71	12.283	15.37	18.35	1.92
0.167	0.00	6.233	1.71	12.300	15.37	18.37	1.92
0.183	0.00	6.250	1.71	12.317	15.37	18.38	1.92
0.200	0.00	6.267	1.92	12.333	15.37	18.40	1.92
0.217	0.00	6.283	1.92	12.350	15.37	18.42	1.92
0.233	0.00	6.300	1.92	12.367	15.37	18.43	1.92
0.250	0.00	6.317	1.92	12.383	15.37	18.45	1.92
0.267	1.17	6.333	1.92	12.400	15.37	18.47	1.92
0.283	1.17	6.350	1.92	12.417	15.37	18.48	1.92
0.300	1.17	6.367	1.92	12.433	15.37	18.50	1.92
0.317	1.17	6.383	1.92	12.450	15.37	18.52	1.92
0.333	1.17	6.400	1.92	12.467	15.37	18.53	1.92
0.350	1.17	6.417	1.92	12.483	15.37	18.55	1.92
0.367	1.17	6.433	1.92	12.500	15.37	18.57	1.92
0.383	1.17	6.450	1.92	12.517	15.37	18.58	1.92
0.400	1.17	6.467	1.92	12.533	15.37	18.60	1.92
0.417	1.17	6.483	1.92	12.550	15.37	18.62	1.92
0.433	1.17	6.500	1.92	12.567	15.37	18.63	1.92
0.450	1.17	6.517	1.92	12.583	15.37	18.65	1.92
0.467	1.17	6.533	1.92	12.600	15.37	18.67	1.92
0.483	1.17	6.550	1.92	12.617	15.37	18.68	1.92
0.500	1.17	6.567	1.92	12.633	15.37	18.70	1.92
0.517	1.17	6.583	1.92	12.650	15.37	18.72	1.92
0.533	1.17	6.600	1.92	12.667	15.37	18.73	1.92
0.550	1.17	6.617	1.92	12.683	15.37	18.75	1.92
0.567	1.17	6.633	1.92	12.700	15.37	18.77	1.92
0.583	1.17	6.650	1.92	12.717	15.37	18.78	1.92
0.600	1.17	6.667	1.92	12.733	15.37	18.80	1.92
0.617	1.17	6.683	1.92	12.750	15.37	18.82	1.92
0.633	1.17	6.700	1.92	12.767	7.91	18.83	1.92
0.650	1.17	6.717	1.92	12.783	7.90	18.85	1.92
0.667	1.17	6.733	1.92	12.800	7.90	18.87	1.92
0.683	1.17	6.750	1.92	12.817	7.90	18.88	1.92
0.700	1.17	6.767	1.92	12.833	7.90	18.90	1.92
0.717	1.17	6.783	1.92	12.850	7.90	18.92	1.92
0.733	1.17	6.800	1.92	12.867	7.90	18.93	1.92
0.750	1.17	6.817	1.92	12.883	7.90	18.95	1.92
0.767	1.17	6.833	1.92	12.900	7.90	18.97	1.92
0.783	1.17	6.850	1.92	12.917	7.90	18.98	1.92
0.800	1.17	6.867	1.92	12.933	7.90	19.00	1.92
0.817	1.17	6.883	1.92	12.950	7.90	19.02	1.92
0.833	1.17	6.900	1.92	12.967	7.90	19.03	1.92
0.850	1.17	6.917	1.92	12.983	7.90	19.05	1.92
0.867	1.17	6.933	1.92	13.000	7.90	19.07	1.92
0.883	1.17	6.950	1.92	13.017	7.90	19.08	1.92
0.900	1.17	6.967	1.92	13.033	7.90	19.10	1.92
0.917	1.17	6.983	1.92	13.050	7.90	19.12	1.92
0.933	1.17	7.000	1.92	13.067	7.90	19.13	1.92
0.950	1.17	7.017	1.92	13.083	7.90	19.15	1.92
0.967	1.17	7.033	1.92	13.100	7.90	19.17	1.92
0.983	1.17	7.050	1.92	13.117	7.90	19.18	1.92
1.000	1.17	7.067	1.92	13.133	7.90	19.20	1.92
1.017	1.17	7.083	1.92	13.150	7.90	19.22	1.92
1.033	1.17	7.100	1.92	13.167	7.90	19.23	1.92
1.050	1.17	7.117	1.92	13.183	7.90	19.25	1.92
1.067	1.17	7.133	1.92	13.200	7.90	19.27	1.92
1.083	1.17	7.150	1.92	13.217	7.90	19.28	1.92
1.100	1.17	7.167	1.92	13.233	7.90	19.30	1.92
1.117	1.17	7.183	1.92	13.250	7.90	19.32	1.92
1.133	1.17	7.200	1.92	13.267	5.77	19.33	1.92
1.150	1.17	7.217	1.92	13.283	5.76	19.35	1.92
1.167	1.17	7.233	1.92	13.300	5.76	19.37	1.92
1.183	1.17	7.250	1.92	13.317	5.76	19.38	1.92
1.200	1.17	7.267	2.35	13.333	5.76	19.40	1.92
1.217	1.17	7.283	2.35	13.350	5.76	19.42	1.92
1.233	1.17	7.300	2.35	13.367	5.76	19.43	1.92
1.250	1.17	7.317	2.35	13.383	5.76	19.45	1.92
1.267	1.17	7.333	2.35	13.400	5.76	19.47	1.92
1.283	1.17	7.350	2.35	13.417	5.76	19.48	1.92
1.300	1.17	7.367	2.35	13.433	5.76	19.50	1.92
1.317	1.17	7.383	2.35	13.450	5.76	19.52	1.92
1.333	1.17	7.400	2.35	13.467	5.76	19.53	1.92
1.350	1.17	7.417	2.35	13.483	5.76	19.55	1.92
1.367	1.17	7.433	2.35	13.500	5.76	19.57	1.92
1.383	1.17	7.450	2.35	13.517	5.76	19.58	1.92
1.400	1.17	7.467	2.35	13.533	5.76	19.60	1.92
1.417	1.17	7.483	2.35	13.550	5.76	19.62	1.92
1.433	1.17	7.500	2.35	13.567	5.76	19.63	1.92
1.450	1.17	7.517	2.35	13.583	5.76	19.65	1.92
1.467	1.17	7.533	2.35	13.600	5.76	19.67	1.92
1.483	1.17	7.550	2.35	13.617	5.76	19.68	1.92
1.500	1.17	7.567	2.35	13.633	5.76	19.70	1.92
1.517	1.17	7.583	2.35	13.650	5.76	19.72	1.92
1.533	1.17	7.600	2.35	13.667	5.76	19.73	1.92
1.550	1.17	7.617	2.35	13.683	5.76	19.75	1.92
1.567	1.17	7.633	2.35	13.700	5.76	19.77	1.92
1.583	1.17	7.650	2.35	13.717	5.76	19.78	1.92
1.600	1.17	7.667	2.35	13.733	5.76	19.80	1.92
1.617	1.17	7.683	2.35	13.750	5.76	19.82	1.92
1.633	1.17	7.700	2.35	13.767	4.49	19.83	1.92
1.650	1.17	7.717	2.35	13.783	4.48	19.85	1.92

1.667	1.17	7.733	2.35	13.800	4.48	19.87	1.92
1.683	1.17	7.750	2.35	13.817	4.48	19.88	1.92
1.700	1.17	7.767	2.35	13.833	4.48	19.90	1.92
1.717	1.17	7.783	2.35	13.850	4.48	19.92	1.92
1.733	1.17	7.800	2.35	13.867	4.48	19.93	1.92
1.750	1.17	7.817	2.35	13.883	4.48	19.95	1.92
1.767	1.17	7.833	2.35	13.900	4.48	19.97	1.92
1.783	1.17	7.850	2.35	13.917	4.48	19.98	1.92
1.800	1.17	7.867	2.35	13.933	4.48	20.00	1.92
1.817	1.17	7.883	2.35	13.950	4.48	20.02	1.92
1.833	1.17	7.900	2.35	13.967	4.48	20.03	1.92
1.850	1.17	7.917	2.35	13.983	4.48	20.05	1.92
1.867	1.17	7.933	2.35	14.000	4.48	20.07	1.92
1.883	1.17	7.950	2.35	14.017	4.48	20.08	1.92
1.900	1.17	7.967	2.35	14.033	4.48	20.10	1.92
1.917	1.17	7.983	2.35	14.050	4.48	20.12	1.92
1.933	1.17	8.000	2.35	14.067	4.48	20.13	1.92
1.950	1.17	8.017	2.35	14.083	4.48	20.15	1.92
1.967	1.17	8.033	2.35	14.100	4.48	20.17	1.92
1.983	1.17	8.050	2.35	14.117	4.48	20.18	1.92
2.000	1.17	8.067	2.35	14.133	4.48	20.20	1.92
2.017	1.17	8.083	2.35	14.150	4.48	20.22	1.92
2.033	1.17	8.100	2.35	14.167	4.48	20.23	1.92
2.050	1.17	8.117	2.35	14.183	4.48	20.25	1.92
2.067	1.17	8.133	2.35	14.200	4.48	20.27	1.29
2.083	1.17	8.150	2.35	14.217	4.48	20.28	1.28
2.100	1.17	8.167	2.35	14.233	4.48	20.30	1.28
2.117	1.17	8.183	2.35	14.250	4.48	20.32	1.28
2.133	1.17	8.200	2.35	14.267	3.21	20.33	1.28
2.150	1.17	8.217	2.35	14.283	3.20	20.35	1.28
2.167	1.17	8.233	2.35	14.300	3.20	20.37	1.28
2.183	1.17	8.250	2.35	14.317	3.20	20.38	1.28
2.200	1.17	8.267	2.78	14.333	3.20	20.40	1.28
2.217	1.17	8.283	2.78	14.350	3.20	20.42	1.28
2.233	1.17	8.300	2.78	14.367	3.20	20.43	1.28
2.250	1.17	8.317	2.78	14.383	3.20	20.45	1.28
2.267	1.39	8.333	2.78	14.400	3.20	20.47	1.28
2.283	1.39	8.350	2.78	14.417	3.20	20.48	1.28
2.300	1.39	8.367	2.78	14.433	3.20	20.50	1.28
2.317	1.39	8.383	2.78	14.450	3.20	20.52	1.28
2.333	1.39	8.400	2.78	14.467	3.20	20.53	1.28
2.350	1.39	8.417	2.78	14.483	3.20	20.55	1.28
2.367	1.39	8.433	2.78	14.500	3.20	20.57	1.28
2.383	1.39	8.450	2.78	14.517	3.20	20.58	1.28
2.400	1.39	8.467	2.78	14.533	3.20	20.60	1.28
2.417	1.39	8.483	2.78	14.550	3.20	20.62	1.28
2.433	1.39	8.500	2.78	14.567	3.20	20.63	1.28
2.450	1.39	8.517	2.78	14.583	3.20	20.65	1.28
2.467	1.39	8.533	2.78	14.600	3.20	20.67	1.28
2.483	1.39	8.550	2.78	14.617	3.20	20.68	1.28
2.500	1.39	8.567	2.78	14.633	3.20	20.70	1.28
2.517	1.39	8.583	2.78	14.650	3.20	20.72	1.28
2.533	1.39	8.600	2.78	14.667	3.20	20.73	1.28
2.550	1.39	8.617	2.78	14.683	3.20	20.75	1.28
2.567	1.39	8.633	2.78	14.700	3.20	20.77	1.28
2.583	1.39	8.650	2.78	14.717	3.20	20.78	1.28
2.600	1.39	8.667	2.78	14.733	3.20	20.80	1.28
2.617	1.39	8.683	2.78	14.750	3.20	20.82	1.28
2.633	1.39	8.700	2.78	14.767	3.20	20.83	1.28
2.650	1.39	8.717	2.78	14.783	3.20	20.85	1.28
2.667	1.39	8.733	2.78	14.800	3.20	20.87	1.28
2.683	1.39	8.750	2.78	14.817	3.20	20.88	1.28
2.700	1.39	8.767	2.99	14.833	3.20	20.90	1.28
2.717	1.39	8.783	2.99	14.850	3.20	20.92	1.28
2.733	1.39	8.800	2.99	14.867	3.20	20.93	1.28
2.750	1.39	8.817	2.99	14.883	3.20	20.95	1.28
2.767	1.39	8.833	2.99	14.900	3.20	20.97	1.28
2.783	1.39	8.850	2.99	14.917	3.20	20.98	1.28
2.800	1.39	8.867	2.99	14.933	3.20	21.00	1.28
2.817	1.39	8.883	2.99	14.950	3.20	21.02	1.28
2.833	1.39	8.900	2.99	14.967	3.20	21.03	1.28
2.850	1.39	8.917	2.99	14.983	3.20	21.05	1.28
2.867	1.39	8.933	2.99	15.000	3.20	21.07	1.28
2.883	1.39	8.950	2.99	15.017	3.20	21.08	1.28
2.900	1.39	8.967	2.99	15.033	3.20	21.10	1.28
2.917	1.39	8.983	2.99	15.050	3.20	21.12	1.28
2.933	1.39	9.000	2.99	15.067	3.20	21.13	1.28
2.950	1.39	9.017	2.99	15.083	3.20	21.15	1.28
2.967	1.39	9.033	2.99	15.100	3.20	21.17	1.28
2.983	1.39	9.050	2.99	15.117	3.20	21.18	1.28
3.000	1.39	9.067	2.99	15.133	3.20	21.20	1.28
3.017	1.39	9.083	2.99	15.150	3.20	21.22	1.28
3.033	1.39	9.100	2.99	15.167	3.20	21.23	1.28
3.050	1.39	9.117	2.99	15.183	3.20	21.25	1.28
3.067	1.39	9.133	2.99	15.200	3.20	21.27	1.28
3.083	1.39	9.150	2.99	15.217	3.20	21.28	1.28
3.100	1.39	9.167	2.99	15.233	3.20	21.30	1.28
3.117	1.39	9.183	2.99	15.250	3.20	21.32	1.28
3.133	1.39	9.200	2.99	15.267	3.20	21.33	1.28
3.150	1.39	9.217	2.99	15.283	3.20	21.35	1.28
3.167	1.39	9.233	2.99	15.300	3.20	21.37	1.28
3.183	1.39	9.250	2.99	15.317	3.20	21.38	1.28
3.200	1.39	9.267	3.42	15.333	3.20	21.40	1.28
3.217	1.39	9.283	3.42	15.350	3.20	21.42	1.28
3.233	1.39	9.300	3.42	15.367	3.20	21.43	1.28
3.250	1.39	9.317	3.42	15.383	3.20	21.45	1.28
3.267	1.39	9.333	3.42	15.400	3.20	21.47	1.28
3.283	1.39	9.350	3.42	15.417	3.20	21.48	1.28
3.300	1.39	9.367	3.42	15.433	3.20	21.50	1.28
3.317	1.39	9.383	3.42	15.450	3.20	21.52	1.28

3.333	1.39	9.400	3.42	15.467	3.20	21.53	1.28
3.350	1.39	9.417	3.42	15.483	3.20	21.55	1.28
3.367	1.39	9.433	3.42	15.500	3.20	21.57	1.28
3.383	1.39	9.450	3.42	15.517	3.20	21.58	1.28
3.400	1.39	9.467	3.42	15.533	3.20	21.60	1.28
3.417	1.39	9.483	3.42	15.550	3.20	21.62	1.28
3.433	1.39	9.500	3.42	15.567	3.20	21.63	1.28
3.450	1.39	9.517	3.42	15.583	3.20	21.65	1.28
3.467	1.39	9.533	3.42	15.600	3.20	21.67	1.28
3.483	1.39	9.550	3.42	15.617	3.20	21.68	1.28
3.500	1.39	9.567	3.42	15.633	3.20	21.70	1.28
3.517	1.39	9.583	3.42	15.650	3.20	21.72	1.28
3.533	1.39	9.600	3.42	15.667	3.20	21.73	1.28
3.550	1.39	9.617	3.42	15.683	3.20	21.75	1.28
3.567	1.39	9.633	3.42	15.700	3.20	21.77	1.28
3.583	1.39	9.650	3.42	15.717	3.20	21.78	1.28
3.600	1.39	9.667	3.42	15.733	3.20	21.80	1.28
3.617	1.39	9.683	3.42	15.750	3.20	21.82	1.28
3.633	1.39	9.700	3.42	15.767	3.20	21.83	1.28
3.650	1.39	9.717	3.42	15.783	3.20	21.85	1.28
3.667	1.39	9.733	3.42	15.800	3.20	21.87	1.28
3.683	1.39	9.750	3.42	15.817	3.20	21.88	1.28
3.700	1.39	9.767	3.84	15.833	3.20	21.90	1.28
3.717	1.39	9.783	3.84	15.850	3.20	21.92	1.28
3.733	1.39	9.800	3.84	15.867	3.20	21.93	1.28
3.750	1.39	9.817	3.84	15.883	3.20	21.95	1.28
3.767	1.39	9.833	3.84	15.900	3.20	21.97	1.28
3.783	1.39	9.850	3.84	15.917	3.20	21.98	1.28
3.800	1.39	9.867	3.84	15.933	3.20	22.00	1.28
3.817	1.39	9.883	3.84	15.950	3.20	22.02	1.28
3.833	1.39	9.900	3.84	15.967	3.20	22.03	1.28
3.850	1.39	9.917	3.84	15.983	3.20	22.05	1.28
3.867	1.39	9.933	3.84	16.000	3.20	22.07	1.28
3.883	1.39	9.950	3.84	16.017	3.20	22.08	1.28
3.900	1.39	9.967	3.84	16.033	3.20	22.10	1.28
3.917	1.39	9.983	3.84	16.050	3.20	22.12	1.28
3.933	1.39	10.000	3.84	16.067	3.20	22.13	1.28
3.950	1.39	10.017	3.84	16.083	3.20	22.15	1.28
3.967	1.39	10.033	3.84	16.100	3.20	22.17	1.28
3.983	1.39	10.050	3.84	16.117	3.20	22.18	1.28
4.000	1.39	10.067	3.84	16.133	3.20	22.20	1.28
4.017	1.39	10.083	3.84	16.150	3.20	22.22	1.28
4.033	1.39	10.100	3.84	16.167	3.20	22.23	1.28
4.050	1.39	10.117	3.84	16.183	3.20	22.25	1.28
4.067	1.39	10.133	3.84	16.200	3.20	22.27	1.28
4.083	1.39	10.150	3.84	16.217	3.20	22.28	1.28
4.100	1.39	10.167	3.84	16.233	3.20	22.30	1.28
4.117	1.39	10.183	3.84	16.250	3.20	22.32	1.28
4.133	1.39	10.200	3.84	16.267	1.93	22.33	1.28
4.150	1.39	10.217	3.84	16.283	1.92	22.35	1.28
4.167	1.39	10.233	3.84	16.300	1.92	22.37	1.28
4.183	1.39	10.250	3.84	16.317	1.92	22.38	1.28
4.200	1.39	10.267	4.91	16.333	1.92	22.40	1.28
4.217	1.39	10.283	4.91	16.350	1.92	22.42	1.28
4.233	1.39	10.300	4.91	16.367	1.92	22.43	1.28
4.250	1.39	10.317	4.91	16.383	1.92	22.45	1.28
4.267	1.71	10.333	4.91	16.400	1.92	22.47	1.28
4.283	1.71	10.350	4.91	16.417	1.92	22.48	1.28
4.300	1.71	10.367	4.91	16.433	1.92	22.50	1.28
4.317	1.71	10.383	4.91	16.450	1.92	22.52	1.28
4.333	1.71	10.400	4.91	16.467	1.92	22.53	1.28
4.350	1.71	10.417	4.91	16.483	1.92	22.55	1.28
4.367	1.71	10.433	4.91	16.500	1.92	22.57	1.28
4.383	1.71	10.450	4.91	16.517	1.92	22.58	1.28
4.400	1.71	10.467	4.91	16.533	1.92	22.60	1.28
4.417	1.71	10.483	4.91	16.550	1.92	22.62	1.28
4.433	1.71	10.500	4.91	16.567	1.92	22.63	1.28
4.450	1.71	10.517	4.91	16.583	1.92	22.65	1.28
4.467	1.71	10.533	4.91	16.600	1.92	22.67	1.28
4.483	1.71	10.550	4.91	16.617	1.92	22.68	1.28
4.500	1.71	10.567	4.91	16.633	1.92	22.70	1.28
4.517	1.71	10.583	4.91	16.650	1.92	22.72	1.28
4.533	1.71	10.600	4.91	16.667	1.92	22.73	1.28
4.550	1.71	10.617	4.91	16.683	1.92	22.75	1.28
4.567	1.71	10.633	4.91	16.700	1.92	22.77	1.28
4.583	1.71	10.650	4.91	16.717	1.92	22.78	1.28
4.600	1.71	10.667	4.91	16.733	1.92	22.80	1.28
4.617	1.71	10.683	4.91	16.750	1.92	22.82	1.28
4.633	1.71	10.700	4.91	16.767	1.92	22.83	1.28
4.650	1.71	10.717	4.91	16.783	1.92	22.85	1.28
4.667	1.71	10.733	4.91	16.800	1.92	22.87	1.28
4.683	1.71	10.750	4.91	16.817	1.92	22.88	1.28
4.700	1.71	10.767	6.62	16.833	1.92	22.90	1.28
4.717	1.71	10.783	6.62	16.850	1.92	22.92	1.28
4.733	1.71	10.800	6.62	16.867	1.92	22.93	1.28
4.750	1.71	10.817	6.62	16.883	1.92	22.95	1.28
4.767	1.71	10.833	6.62	16.900	1.92	22.97	1.28
4.783	1.71	10.850	6.62	16.917	1.92	22.98	1.28
4.800	1.71	10.867	6.62	16.933	1.92	23.00	1.28
4.817	1.71	10.883	6.62	16.950	1.92	23.02	1.28
4.833	1.71	10.900	6.62	16.967	1.92	23.03	1.28
4.850	1.71	10.917	6.62	16.983	1.92	23.05	1.28
4.867	1.71	10.933	6.62	17.000	1.92	23.07	1.28
4.883	1.71	10.950	6.62	17.017	1.92	23.08	1.28
4.900	1.71	10.967	6.62	17.033	1.92	23.10	1.28
4.917	1.71	10.983	6.62	17.050	1.92	23.12	1.28
4.933	1.71	11.000	6.62	17.067	1.92	23.13	1.28
4.950	1.71	11.017	6.62	17.083	1.92	23.15	1.28
4.967	1.71	11.033	6.62	17.100	1.92	23.17	1.28
4.983	1.71	11.050	6.62	17.117	1.92	23.18	1.28

5.000	1.71	11.067	6.62	17.133	1.92	23.20	1.28
5.017	1.71	11.083	6.62	17.150	1.92	23.22	1.28
5.033	1.71	11.100	6.62	17.167	1.92	23.23	1.28
5.050	1.71	11.117	6.62	17.183	1.92	23.25	1.28
5.067	1.71	11.133	6.62	17.200	1.92	23.27	1.28
5.083	1.71	11.150	6.62	17.217	1.92	23.28	1.28
5.100	1.71	11.167	6.62	17.233	1.92	23.30	1.28
5.117	1.71	11.183	6.62	17.250	1.92	23.32	1.28
5.133	1.71	11.200	6.62	17.267	1.92	23.33	1.28
5.150	1.71	11.217	6.62	17.283	1.92	23.35	1.28
5.167	1.71	11.233	6.62	17.300	1.92	23.37	1.28
5.183	1.71	11.250	6.62	17.317	1.92	23.38	1.28
5.200	1.71	11.267	10.25	17.333	1.92	23.40	1.28
5.217	1.71	11.283	10.25	17.350	1.92	23.42	1.28
5.233	1.71	11.300	10.25	17.367	1.92	23.43	1.28
5.250	1.71	11.317	10.25	17.383	1.92	23.45	1.28
5.267	1.71	11.333	10.25	17.400	1.92	23.47	1.28
5.283	1.71	11.350	10.25	17.417	1.92	23.48	1.28
5.300	1.71	11.367	10.25	17.433	1.92	23.50	1.28
5.317	1.71	11.383	10.25	17.450	1.92	23.52	1.28
5.333	1.71	11.400	10.25	17.467	1.92	23.53	1.28
5.350	1.71	11.417	10.25	17.483	1.92	23.55	1.28
5.367	1.71	11.433	10.25	17.500	1.92	23.57	1.28
5.383	1.71	11.450	10.25	17.517	1.92	23.58	1.28
5.400	1.71	11.467	10.25	17.533	1.92	23.60	1.28
5.417	1.71	11.483	10.25	17.550	1.92	23.62	1.28
5.433	1.71	11.500	10.25	17.567	1.92	23.63	1.28
5.450	1.71	11.517	10.25	17.583	1.92	23.65	1.28
5.467	1.71	11.533	10.25	17.600	1.92	23.67	1.28
5.483	1.71	11.550	10.25	17.617	1.92	23.68	1.28
5.500	1.71	11.567	10.25	17.633	1.92	23.70	1.28
5.517	1.71	11.583	10.25	17.650	1.92	23.72	1.28
5.533	1.71	11.600	10.25	17.667	1.92	23.73	1.28
5.550	1.71	11.617	10.25	17.683	1.92	23.75	1.28
5.567	1.71	11.633	10.25	17.700	1.92	23.77	1.28
5.583	1.71	11.650	10.25	17.717	1.92	23.78	1.28
5.600	1.71	11.667	10.25	17.733	1.92	23.80	1.28
5.617	1.71	11.683	10.25	17.750	1.92	23.82	1.28
5.633	1.71	11.700	10.25	17.767	1.92	23.83	1.28
5.650	1.71	11.717	10.25	17.783	1.92	23.85	1.28
5.667	1.71	11.733	10.25	17.800	1.92	23.87	1.28
5.683	1.71	11.750	10.25	17.817	1.92	23.88	1.28
5.700	1.71	11.767	31.58	17.833	1.92	23.90	1.28
5.717	1.71	11.783	31.60	17.850	1.92	23.92	1.28
5.733	1.71	11.800	31.60	17.867	1.92	23.93	1.28
5.750	1.71	11.817	31.60	17.883	1.92	23.95	1.28
5.767	1.71	11.833	31.60	17.900	1.92	23.97	1.28
5.783	1.71	11.850	31.60	17.917	1.92	23.98	1.28
5.800	1.71	11.867	31.60	17.933	1.92	24.00	1.28
5.817	1.71	11.883	31.60	17.950	1.92	24.02	1.28
5.833	1.71	11.900	31.60	17.967	1.92	24.03	1.28
5.850	1.71	11.917	31.60	17.983	1.92	24.05	1.28
5.867	1.71	11.933	31.60	18.000	1.92	24.07	1.28
5.883	1.71	11.950	31.60	18.017	1.92	24.08	1.28
5.900	1.71	11.967	31.60	18.033	1.92	24.10	1.28
5.917	1.71	11.983	31.60	18.050	1.92	24.12	1.28
5.933	1.71	12.000	31.60	18.067	1.92	24.13	1.28
5.950	1.71	12.017	130.58	18.083	1.92	24.15	1.28
5.967	1.71	12.033	130.65	18.100	1.92	24.17	1.28
5.983	1.71	12.050	130.65	18.117	1.92	24.18	1.28
6.000	1.71	12.067	130.65	18.133	1.92	24.20	1.28
6.017	1.71	12.083	130.65	18.150	1.92	24.22	1.28
6.033	1.71	12.100	130.65	18.167	1.92	24.23	1.28
6.050	1.71	12.117	130.65	18.183	1.92	24.25	1.28
6.067	1.71	12.133	130.65	18.200	1.92		

Max.Eff.Inten.(mm/hr)=	130.65	38.54		
over (min)	5.00	3.00		
Storage Coeff. (min)=	0.74 (ii)	2.87 (ii)		
Unit Hyd. Tpeak (min)=	5.00	3.00		
Unit Hyd. peak (cms)=	0.51	0.39		
			TOTALS	
PEAK FLOW (cms)=	0.02	0.00	0.022 (iii)	
TIME TO PEAK (hrs)=	12.22	12.25	12.25	
RUNOFF VOLUME (mm)=	104.73	26.67	87.55	
TOTAL RAINFALL (mm)=	106.74	106.74	106.74	
RUNOFF COEFFICIENT =	0.98	0.25	0.82	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. 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(0003)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0092	0.0009
	0.0008	0.0000	0.0098	0.0010
	0.0032	0.0001	0.0104	0.0012
	0.0048	0.0003	0.0110	0.0013
	0.0059	0.0004	0.0115	0.0014
	0.0069	0.0005	0.0121	0.0016
	0.0077	0.0007	0.0125	0.0017
	0.0085	0.0008	0.0130	0.0018

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	0.070	0.022	12.25	87.55
OUTFLOW: ID= 1 (0003)	0.070	0.011	12.32	87.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 50.75
TIME SHIFT OF PEAK FLOW (min)= 4.00
MAXIMUM STORAGE USED (ha.m.)= 0.0013

CALIB STANDHYD (0202)	Area (ha)= 0.02
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.00
Dep. Storage	(mm)=	2.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	11.55	15.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.00	6.083	1.71	12.150	130.65	18.22	1.92
0.033	0.00	6.100	1.71	12.167	130.65	18.23	1.92
0.050	0.00	6.117	1.71	12.183	130.65	18.25	1.92
0.067	0.00	6.133	1.71	12.200	130.65	18.27	1.92
0.083	0.00	6.150	1.71	12.217	130.65	18.28	1.92
0.100	0.00	6.167	1.71	12.233	130.65	18.30	1.92
0.117	0.00	6.183	1.71	12.250	130.65	18.32	1.92
0.133	0.00	6.200	1.71	12.267	15.48	18.33	1.92
0.150	0.00	6.217	1.71	12.283	15.37	18.35	1.92
0.167	0.00	6.233	1.71	12.300	15.37	18.37	1.92
0.183	0.00	6.250	1.71	12.317	15.37	18.38	1.92
0.200	0.00	6.267	1.92	12.333	15.37	18.40	1.92
0.217	0.00	6.283	1.92	12.350	15.37	18.42	1.92
0.233	0.00	6.300	1.92	12.367	15.37	18.43	1.92
0.250	0.00	6.317	1.92	12.383	15.37	18.45	1.92
0.267	1.17	6.333	1.92	12.400	15.37	18.47	1.92
0.283	1.17	6.350	1.92	12.417	15.37	18.48	1.92
0.300	1.17	6.367	1.92	12.433	15.37	18.50	1.92
0.317	1.17	6.383	1.92	12.450	15.37	18.52	1.92
0.333	1.17	6.400	1.92	12.467	15.37	18.53	1.92
0.350	1.17	6.417	1.92	12.483	15.37	18.55	1.92
0.367	1.17	6.433	1.92	12.500	15.37	18.57	1.92
0.383	1.17	6.450	1.92	12.517	15.37	18.58	1.92
0.400	1.17	6.467	1.92	12.533	15.37	18.60	1.92
0.417	1.17	6.483	1.92	12.550	15.37	18.62	1.92
0.433	1.17	6.500	1.92	12.567	15.37	18.63	1.92
0.450	1.17	6.517	1.92	12.583	15.37	18.65	1.92
0.467	1.17	6.533	1.92	12.600	15.37	18.67	1.92
0.483	1.17	6.550	1.92	12.617	15.37	18.68	1.92
0.500	1.17	6.567	1.92	12.633	15.37	18.70	1.92
0.517	1.17	6.583	1.92	12.650	15.37	18.72	1.92
0.533	1.17	6.600	1.92	12.667	15.37	18.73	1.92
0.550	1.17	6.617	1.92	12.683	15.37	18.75	1.92
0.567	1.17	6.633	1.92	12.700	15.37	18.77	1.92
0.583	1.17	6.650	1.92	12.717	15.37	18.78	1.92
0.600	1.17	6.667	1.92	12.733	15.37	18.80	1.92
0.617	1.17	6.683	1.92	12.750	15.37	18.82	1.92
0.633	1.17	6.700	1.92	12.767	7.91	18.83	1.92
0.650	1.17	6.717	1.92	12.783	7.90	18.85	1.92
0.667	1.17	6.733	1.92	12.800	7.90	18.87	1.92
0.683	1.17	6.750	1.92	12.817	7.90	18.88	1.92
0.700	1.17	6.767	1.92	12.833	7.90	18.90	1.92
0.717	1.17	6.783	1.92	12.850	7.90	18.92	1.92
0.733	1.17	6.800	1.92	12.867	7.90	18.93	1.92
0.750	1.17	6.817	1.92	12.883	7.90	18.95	1.92
0.767	1.17	6.833	1.92	12.900	7.90	18.97	1.92
0.783	1.17	6.850	1.92	12.917	7.90	18.98	1.92
0.800	1.17	6.867	1.92	12.933	7.90	19.00	1.92
0.817	1.17	6.883	1.92	12.950	7.90	19.02	1.92
0.833	1.17	6.900	1.92	12.967	7.90	19.03	1.92
0.850	1.17	6.917	1.92	12.983	7.90	19.05	1.92
0.867	1.17	6.933	1.92	13.000	7.90	19.07	1.92
0.883	1.17	6.950	1.92	13.017	7.90	19.08	1.92
0.900	1.17	6.967	1.92	13.033	7.90	19.10	1.92
0.917	1.17	6.983	1.92	13.050	7.90	19.12	1.92
0.933	1.17	7.000	1.92	13.067	7.90	19.13	1.92
0.950	1.17	7.017	1.92	13.083	7.90	19.15	1.92
0.967	1.17	7.033	1.92	13.100	7.90	19.17	1.92
0.983	1.17	7.050	1.92	13.117	7.90	19.18	1.92
1.000	1.17	7.067	1.92	13.133	7.90	19.20	1.92
1.017	1.17	7.083	1.92	13.150	7.90	19.22	1.92
1.033	1.17	7.100	1.92	13.167	7.90	19.23	1.92
1.050	1.17	7.117	1.92	13.183	7.90	19.25	1.92
1.067	1.17	7.133	1.92	13.200	7.90	19.27	1.92
1.083	1.17	7.150	1.92	13.217	7.90	19.28	1.92
1.100	1.17	7.167	1.92	13.233	7.90	19.30	1.92
1.117	1.17	7.183	1.92	13.250	7.90	19.32	1.92
1.133	1.17	7.200	1.92	13.267	5.77	19.33	1.92
1.150	1.17	7.217	1.92	13.283	5.76	19.35	1.92
1.167	1.17	7.233	1.92	13.300	5.76	19.37	1.92
1.183	1.17	7.250	1.92	13.317	5.76	19.38	1.92

1.200	1.17	7.267	2.35	13.333	5.76	19.40	1.92
1.217	1.17	7.283	2.35	13.350	5.76	19.42	1.92
1.233	1.17	7.300	2.35	13.367	5.76	19.43	1.92
1.250	1.17	7.317	2.35	13.383	5.76	19.45	1.92
1.267	1.17	7.333	2.35	13.400	5.76	19.47	1.92
1.283	1.17	7.350	2.35	13.417	5.76	19.48	1.92
1.300	1.17	7.367	2.35	13.433	5.76	19.50	1.92
1.317	1.17	7.383	2.35	13.450	5.76	19.52	1.92
1.333	1.17	7.400	2.35	13.467	5.76	19.53	1.92
1.350	1.17	7.417	2.35	13.483	5.76	19.55	1.92
1.367	1.17	7.433	2.35	13.500	5.76	19.57	1.92
1.383	1.17	7.450	2.35	13.517	5.76	19.58	1.92
1.400	1.17	7.467	2.35	13.533	5.76	19.60	1.92
1.417	1.17	7.483	2.35	13.550	5.76	19.62	1.92
1.433	1.17	7.500	2.35	13.567	5.76	19.63	1.92
1.450	1.17	7.517	2.35	13.583	5.76	19.65	1.92
1.467	1.17	7.533	2.35	13.600	5.76	19.67	1.92
1.483	1.17	7.550	2.35	13.617	5.76	19.68	1.92
1.500	1.17	7.567	2.35	13.633	5.76	19.70	1.92
1.517	1.17	7.583	2.35	13.650	5.76	19.72	1.92
1.533	1.17	7.600	2.35	13.667	5.76	19.73	1.92
1.550	1.17	7.617	2.35	13.683	5.76	19.75	1.92
1.567	1.17	7.633	2.35	13.700	5.76	19.77	1.92
1.583	1.17	7.650	2.35	13.717	5.76	19.78	1.92
1.600	1.17	7.667	2.35	13.733	5.76	19.80	1.92
1.617	1.17	7.683	2.35	13.750	5.76	19.82	1.92
1.633	1.17	7.700	2.35	13.767	4.49	19.83	1.92
1.650	1.17	7.717	2.35	13.783	4.48	19.85	1.92
1.667	1.17	7.733	2.35	13.800	4.48	19.87	1.92
1.683	1.17	7.750	2.35	13.817	4.48	19.88	1.92
1.700	1.17	7.767	2.35	13.833	4.48	19.90	1.92
1.717	1.17	7.783	2.35	13.850	4.48	19.92	1.92
1.733	1.17	7.800	2.35	13.867	4.48	19.93	1.92
1.750	1.17	7.817	2.35	13.883	4.48	19.95	1.92
1.767	1.17	7.833	2.35	13.900	4.48	19.97	1.92
1.783	1.17	7.850	2.35	13.917	4.48	19.98	1.92
1.800	1.17	7.867	2.35	13.933	4.48	20.00	1.92
1.817	1.17	7.883	2.35	13.950	4.48	20.02	1.92
1.833	1.17	7.900	2.35	13.967	4.48	20.03	1.92
1.850	1.17	7.917	2.35	13.983	4.48	20.05	1.92
1.867	1.17	7.933	2.35	14.000	4.48	20.07	1.92
1.883	1.17	7.950	2.35	14.017	4.48	20.08	1.92
1.900	1.17	7.967	2.35	14.033	4.48	20.10	1.92
1.917	1.17	7.983	2.35	14.050	4.48	20.12	1.92
1.933	1.17	8.000	2.35	14.067	4.48	20.13	1.92
1.950	1.17	8.017	2.35	14.083	4.48	20.15	1.92
1.967	1.17	8.033	2.35	14.100	4.48	20.17	1.92
1.983	1.17	8.050	2.35	14.117	4.48	20.18	1.92
2.000	1.17	8.067	2.35	14.133	4.48	20.20	1.92
2.017	1.17	8.083	2.35	14.150	4.48	20.22	1.92
2.033	1.17	8.100	2.35	14.167	4.48	20.23	1.92
2.050	1.17	8.117	2.35	14.183	4.48	20.25	1.92
2.067	1.17	8.133	2.35	14.200	4.48	20.27	1.29
2.083	1.17	8.150	2.35	14.217	4.48	20.28	1.28
2.100	1.17	8.167	2.35	14.233	4.48	20.30	1.28
2.117	1.17	8.183	2.35	14.250	4.48	20.32	1.28
2.133	1.17	8.200	2.35	14.267	3.21	20.33	1.28
2.150	1.17	8.217	2.35	14.283	3.20	20.35	1.28
2.167	1.17	8.233	2.35	14.300	3.20	20.37	1.28
2.183	1.17	8.250	2.35	14.317	3.20	20.38	1.28
2.200	1.17	8.267	2.78	14.333	3.20	20.40	1.28
2.217	1.17	8.283	2.78	14.350	3.20	20.42	1.28
2.233	1.17	8.300	2.78	14.367	3.20	20.43	1.28
2.250	1.17	8.317	2.78	14.383	3.20	20.45	1.28
2.267	1.39	8.333	2.78	14.400	3.20	20.47	1.28
2.283	1.39	8.350	2.78	14.417	3.20	20.48	1.28
2.300	1.39	8.367	2.78	14.433	3.20	20.50	1.28
2.317	1.39	8.383	2.78	14.450	3.20	20.52	1.28
2.333	1.39	8.400	2.78	14.467	3.20	20.53	1.28
2.350	1.39	8.417	2.78	14.483	3.20	20.55	1.28
2.367	1.39	8.433	2.78	14.500	3.20	20.57	1.28
2.383	1.39	8.450	2.78	14.517	3.20	20.58	1.28
2.400	1.39	8.467	2.78	14.533	3.20	20.60	1.28
2.417	1.39	8.483	2.78	14.550	3.20	20.62	1.28
2.433	1.39	8.500	2.78	14.567	3.20	20.63	1.28
2.450	1.39	8.517	2.78	14.583	3.20	20.65	1.28
2.467	1.39	8.533	2.78	14.600	3.20	20.67	1.28
2.483	1.39	8.550	2.78	14.617	3.20	20.68	1.28
2.500	1.39	8.567	2.78	14.633	3.20	20.70	1.28
2.517	1.39	8.583	2.78	14.650	3.20	20.72	1.28
2.533	1.39	8.600	2.78	14.667	3.20	20.73	1.28
2.550	1.39	8.617	2.78	14.683	3.20	20.75	1.28
2.567	1.39	8.633	2.78	14.700	3.20	20.77	1.28
2.583	1.39	8.650	2.78	14.717	3.20	20.78	1.28
2.600	1.39	8.667	2.78	14.733	3.20	20.80	1.28
2.617	1.39	8.683	2.78	14.750	3.20	20.82	1.28
2.633	1.39	8.700	2.78	14.767	3.20	20.83	1.28
2.650	1.39	8.717	2.78	14.783	3.20	20.85	1.28
2.667	1.39	8.733	2.78	14.800	3.20	20.87	1.28
2.683	1.39	8.750	2.78	14.817	3.20	20.88	1.28
2.700	1.39	8.767	2.99	14.833	3.20	20.90	1.28
2.717	1.39	8.783	2.99	14.850	3.20	20.92	1.28
2.733	1.39	8.800	2.99	14.867	3.20	20.93	1.28
2.750	1.39	8.817	2.99	14.883	3.20	20.95	1.28
2.767	1.39	8.833	2.99	14.900	3.20	20.97	1.28
2.783	1.39	8.850	2.99	14.917	3.20	20.98	1.28
2.800	1.39	8.867	2.99	14.933	3.20	21.00	1.28
2.817	1.39	8.883	2.99	14.950	3.20	21.02	1.28
2.833	1.39	8.900	2.99	14.967	3.20	21.03	1.28
2.850	1.39	8.917	2.99	14.983	3.20	21.05	1.28

2.867	1.39	8.933	2.99	15.000	3.20	21.07	1.28
2.883	1.39	8.950	2.99	15.017	3.20	21.08	1.28
2.900	1.39	8.967	2.99	15.033	3.20	21.10	1.28
2.917	1.39	8.983	2.99	15.050	3.20	21.12	1.28
2.933	1.39	9.000	2.99	15.067	3.20	21.13	1.28
2.950	1.39	9.017	2.99	15.083	3.20	21.15	1.28
2.967	1.39	9.033	2.99	15.100	3.20	21.17	1.28
2.983	1.39	9.050	2.99	15.117	3.20	21.18	1.28
3.000	1.39	9.067	2.99	15.133	3.20	21.20	1.28
3.017	1.39	9.083	2.99	15.150	3.20	21.22	1.28
3.033	1.39	9.100	2.99	15.167	3.20	21.23	1.28
3.050	1.39	9.117	2.99	15.183	3.20	21.25	1.28
3.067	1.39	9.133	2.99	15.200	3.20	21.27	1.28
3.083	1.39	9.150	2.99	15.217	3.20	21.28	1.28
3.100	1.39	9.167	2.99	15.233	3.20	21.30	1.28
3.117	1.39	9.183	2.99	15.250	3.20	21.32	1.28
3.133	1.39	9.200	2.99	15.267	3.20	21.33	1.28
3.150	1.39	9.217	2.99	15.283	3.20	21.35	1.28
3.167	1.39	9.233	2.99	15.300	3.20	21.37	1.28
3.183	1.39	9.250	2.99	15.317	3.20	21.38	1.28
3.200	1.39	9.267	3.42	15.333	3.20	21.40	1.28
3.217	1.39	9.283	3.42	15.350	3.20	21.42	1.28
3.233	1.39	9.300	3.42	15.367	3.20	21.43	1.28
3.250	1.39	9.317	3.42	15.383	3.20	21.45	1.28
3.267	1.39	9.333	3.42	15.400	3.20	21.47	1.28
3.283	1.39	9.350	3.42	15.417	3.20	21.48	1.28
3.300	1.39	9.367	3.42	15.433	3.20	21.50	1.28
3.317	1.39	9.383	3.42	15.450	3.20	21.52	1.28
3.333	1.39	9.400	3.42	15.467	3.20	21.53	1.28
3.350	1.39	9.417	3.42	15.483	3.20	21.55	1.28
3.367	1.39	9.433	3.42	15.500	3.20	21.57	1.28
3.383	1.39	9.450	3.42	15.517	3.20	21.58	1.28
3.400	1.39	9.467	3.42	15.533	3.20	21.60	1.28
3.417	1.39	9.483	3.42	15.550	3.20	21.62	1.28
3.433	1.39	9.500	3.42	15.567	3.20	21.63	1.28
3.450	1.39	9.517	3.42	15.583	3.20	21.65	1.28
3.467	1.39	9.533	3.42	15.600	3.20	21.67	1.28
3.483	1.39	9.550	3.42	15.617	3.20	21.68	1.28
3.500	1.39	9.567	3.42	15.633	3.20	21.70	1.28
3.517	1.39	9.583	3.42	15.650	3.20	21.72	1.28
3.533	1.39	9.600	3.42	15.667	3.20	21.73	1.28
3.550	1.39	9.617	3.42	15.683	3.20	21.75	1.28
3.567	1.39	9.633	3.42	15.700	3.20	21.77	1.28
3.583	1.39	9.650	3.42	15.717	3.20	21.78	1.28
3.600	1.39	9.667	3.42	15.733	3.20	21.80	1.28
3.617	1.39	9.683	3.42	15.750	3.20	21.82	1.28
3.633	1.39	9.700	3.42	15.767	3.20	21.83	1.28
3.650	1.39	9.717	3.42	15.783	3.20	21.85	1.28
3.667	1.39	9.733	3.42	15.800	3.20	21.87	1.28
3.683	1.39	9.750	3.42	15.817	3.20	21.88	1.28
3.700	1.39	9.767	3.84	15.833	3.20	21.90	1.28
3.717	1.39	9.783	3.84	15.850	3.20	21.92	1.28
3.733	1.39	9.800	3.84	15.867	3.20	21.93	1.28
3.750	1.39	9.817	3.84	15.883	3.20	21.95	1.28
3.767	1.39	9.833	3.84	15.900	3.20	21.97	1.28
3.783	1.39	9.850	3.84	15.917	3.20	21.98	1.28
3.800	1.39	9.867	3.84	15.933	3.20	22.00	1.28
3.817	1.39	9.883	3.84	15.950	3.20	22.02	1.28
3.833	1.39	9.900	3.84	15.967	3.20	22.03	1.28
3.850	1.39	9.917	3.84	15.983	3.20	22.05	1.28
3.867	1.39	9.933	3.84	16.000	3.20	22.07	1.28
3.883	1.39	9.950	3.84	16.017	3.20	22.08	1.28
3.900	1.39	9.967	3.84	16.033	3.20	22.10	1.28
3.917	1.39	9.983	3.84	16.050	3.20	22.12	1.28
3.933	1.39	10.000	3.84	16.067	3.20	22.13	1.28
3.950	1.39	10.017	3.84	16.083	3.20	22.15	1.28
3.967	1.39	10.033	3.84	16.100	3.20	22.17	1.28
3.983	1.39	10.050	3.84	16.117	3.20	22.18	1.28
4.000	1.39	10.067	3.84	16.133	3.20	22.20	1.28
4.017	1.39	10.083	3.84	16.150	3.20	22.22	1.28
4.033	1.39	10.100	3.84	16.167	3.20	22.23	1.28
4.050	1.39	10.117	3.84	16.183	3.20	22.25	1.28
4.067	1.39	10.133	3.84	16.200	3.20	22.27	1.28
4.083	1.39	10.150	3.84	16.217	3.20	22.28	1.28
4.100	1.39	10.167	3.84	16.233	3.20	22.30	1.28
4.117	1.39	10.183	3.84	16.250	3.20	22.32	1.28
4.133	1.39	10.200	3.84	16.267	1.93	22.33	1.28
4.150	1.39	10.217	3.84	16.283	1.92	22.35	1.28
4.167	1.39	10.233	3.84	16.300	1.92	22.37	1.28
4.183	1.39	10.250	3.84	16.317	1.92	22.38	1.28
4.200	1.39	10.267	4.91	16.333	1.92	22.40	1.28
4.217	1.39	10.283	4.91	16.350	1.92	22.42	1.28
4.233	1.39	10.300	4.91	16.367	1.92	22.43	1.28
4.250	1.39	10.317	4.91	16.383	1.92	22.45	1.28
4.267	1.71	10.333	4.91	16.400	1.92	22.47	1.28
4.283	1.71	10.350	4.91	16.417	1.92	22.48	1.28
4.300	1.71	10.367	4.91	16.433	1.92	22.50	1.28
4.317	1.71	10.383	4.91	16.450	1.92	22.52	1.28
4.333	1.71	10.400	4.91	16.467	1.92	22.53	1.28
4.350	1.71	10.417	4.91	16.483	1.92	22.55	1.28
4.367	1.71	10.433	4.91	16.500	1.92	22.57	1.28
4.383	1.71	10.450	4.91	16.517	1.92	22.58	1.28
4.400	1.71	10.467	4.91	16.533	1.92	22.60	1.28
4.417	1.71	10.483	4.91	16.550	1.92	22.62	1.28
4.433	1.71	10.500	4.91	16.567	1.92	22.63	1.28
4.450	1.71	10.517	4.91	16.583	1.92	22.65	1.28
4.467	1.71	10.533	4.91	16.600	1.92	22.67	1.28
4.483	1.71	10.550	4.91	16.617	1.92	22.68	1.28
4.500	1.71	10.567	4.91	16.633	1.92	22.70	1.28
4.517	1.71	10.583	4.91	16.650	1.92	22.72	1.28

4.533	1.71	10.600	4.91	16.667	1.92	22.73	1.28
4.550	1.71	10.617	4.91	16.683	1.92	22.75	1.28
4.567	1.71	10.633	4.91	16.700	1.92	22.77	1.28
4.583	1.71	10.650	4.91	16.717	1.92	22.78	1.28
4.600	1.71	10.667	4.91	16.733	1.92	22.80	1.28
4.617	1.71	10.683	4.91	16.750	1.92	22.82	1.28
4.633	1.71	10.700	4.91	16.767	1.92	22.83	1.28
4.650	1.71	10.717	4.91	16.783	1.92	22.85	1.28
4.667	1.71	10.733	4.91	16.800	1.92	22.87	1.28
4.683	1.71	10.750	4.91	16.817	1.92	22.88	1.28
4.700	1.71	10.767	6.62	16.833	1.92	22.90	1.28
4.717	1.71	10.783	6.62	16.850	1.92	22.92	1.28
4.733	1.71	10.800	6.62	16.867	1.92	22.93	1.28
4.750	1.71	10.817	6.62	16.883	1.92	22.95	1.28
4.767	1.71	10.833	6.62	16.900	1.92	22.97	1.28
4.783	1.71	10.850	6.62	16.917	1.92	22.98	1.28
4.800	1.71	10.867	6.62	16.933	1.92	23.00	1.28
4.817	1.71	10.883	6.62	16.950	1.92	23.02	1.28
4.833	1.71	10.900	6.62	16.967	1.92	23.03	1.28
4.850	1.71	10.917	6.62	16.983	1.92	23.05	1.28
4.867	1.71	10.933	6.62	17.000	1.92	23.07	1.28
4.883	1.71	10.950	6.62	17.017	1.92	23.08	1.28
4.900	1.71	10.967	6.62	17.033	1.92	23.10	1.28
4.917	1.71	10.983	6.62	17.050	1.92	23.12	1.28
4.933	1.71	11.000	6.62	17.067	1.92	23.13	1.28
4.950	1.71	11.017	6.62	17.083	1.92	23.15	1.28
4.967	1.71	11.033	6.62	17.100	1.92	23.17	1.28
4.983	1.71	11.050	6.62	17.117	1.92	23.18	1.28
5.000	1.71	11.067	6.62	17.133	1.92	23.20	1.28
5.017	1.71	11.083	6.62	17.150	1.92	23.22	1.28
5.033	1.71	11.100	6.62	17.167	1.92	23.23	1.28
5.050	1.71	11.117	6.62	17.183	1.92	23.25	1.28
5.067	1.71	11.133	6.62	17.200	1.92	23.27	1.28
5.083	1.71	11.150	6.62	17.217	1.92	23.28	1.28
5.100	1.71	11.167	6.62	17.233	1.92	23.30	1.28
5.117	1.71	11.183	6.62	17.250	1.92	23.32	1.28
5.133	1.71	11.200	6.62	17.267	1.92	23.33	1.28
5.150	1.71	11.217	6.62	17.283	1.92	23.35	1.28
5.167	1.71	11.233	6.62	17.300	1.92	23.37	1.28
5.183	1.71	11.250	6.62	17.317	1.92	23.38	1.28
5.200	1.71	11.267	10.25	17.333	1.92	23.40	1.28
5.217	1.71	11.283	10.25	17.350	1.92	23.42	1.28
5.233	1.71	11.300	10.25	17.367	1.92	23.43	1.28
5.250	1.71	11.317	10.25	17.383	1.92	23.45	1.28
5.267	1.71	11.333	10.25	17.400	1.92	23.47	1.28
5.283	1.71	11.350	10.25	17.417	1.92	23.48	1.28
5.300	1.71	11.367	10.25	17.433	1.92	23.50	1.28
5.317	1.71	11.383	10.25	17.450	1.92	23.52	1.28
5.333	1.71	11.400	10.25	17.467	1.92	23.53	1.28
5.350	1.71	11.417	10.25	17.483	1.92	23.55	1.28
5.367	1.71	11.433	10.25	17.500	1.92	23.57	1.28
5.383	1.71	11.450	10.25	17.517	1.92	23.58	1.28
5.400	1.71	11.467	10.25	17.533	1.92	23.60	1.28
5.417	1.71	11.483	10.25	17.550	1.92	23.62	1.28
5.433	1.71	11.500	10.25	17.567	1.92	23.63	1.28
5.450	1.71	11.517	10.25	17.583	1.92	23.65	1.28
5.467	1.71	11.533	10.25	17.600	1.92	23.67	1.28
5.483	1.71	11.550	10.25	17.617	1.92	23.68	1.28
5.500	1.71	11.567	10.25	17.633	1.92	23.70	1.28
5.517	1.71	11.583	10.25	17.650	1.92	23.72	1.28
5.533	1.71	11.600	10.25	17.667	1.92	23.73	1.28
5.550	1.71	11.617	10.25	17.683	1.92	23.75	1.28
5.567	1.71	11.633	10.25	17.700	1.92	23.77	1.28
5.583	1.71	11.650	10.25	17.717	1.92	23.78	1.28
5.600	1.71	11.667	10.25	17.733	1.92	23.80	1.28
5.617	1.71	11.683	10.25	17.750	1.92	23.82	1.28
5.633	1.71	11.700	10.25	17.767	1.92	23.83	1.28
5.650	1.71	11.717	10.25	17.783	1.92	23.85	1.28
5.667	1.71	11.733	10.25	17.800	1.92	23.87	1.28
5.683	1.71	11.750	10.25	17.817	1.92	23.88	1.28
5.700	1.71	11.767	31.58	17.833	1.92	23.90	1.28
5.717	1.71	11.783	31.60	17.850	1.92	23.92	1.28
5.733	1.71	11.800	31.60	17.867	1.92	23.93	1.28
5.750	1.71	11.817	31.60	17.883	1.92	23.95	1.28
5.767	1.71	11.833	31.60	17.900	1.92	23.97	1.28
5.783	1.71	11.850	31.60	17.917	1.92	23.98	1.28
5.800	1.71	11.867	31.60	17.933	1.92	24.00	1.28
5.817	1.71	11.883	31.60	17.950	1.92	24.02	1.28
5.833	1.71	11.900	31.60	17.967	1.92	24.03	1.28
5.850	1.71	11.917	31.60	17.983	1.92	24.05	1.28
5.867	1.71	11.933	31.60	18.000	1.92	24.07	1.28
5.883	1.71	11.950	31.60	18.017	1.92	24.08	1.28
5.900	1.71	11.967	31.60	18.033	1.92	24.10	1.28
5.917	1.71	11.983	31.60	18.050	1.92	24.12	1.28
5.933	1.71	12.000	31.60	18.067	1.92	24.13	1.28
5.950	1.71	12.017	130.58	18.083	1.92	24.15	1.28
5.967	1.71	12.033	130.65	18.100	1.92	24.17	1.28
5.983	1.71	12.050	130.65	18.117	1.92	24.18	1.28
6.000	1.71	12.067	130.65	18.133	1.92	24.20	1.28
6.017	1.71	12.083	130.65	18.150	1.92	24.22	1.28
6.033	1.71	12.100	130.65	18.167	1.92	24.23	1.28
6.050	1.71	12.117	130.65	18.183	1.92	24.25	1.28
6.067	1.71	12.133	130.65	18.200	1.92		

Max.Eff.Inten.(mm/hr)=	130.65	38.54	
over (min)	5.00	2.00	
Storage Coeff. (min)=	0.51 (ii)	1.07 (ii)	
Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.54	0.79	
			TOTALS

```
     PEAK FLOW       (cms)=       0.01         0.00          0.007 (iii)
     TIME TO PEAK    (hrs)=      12.17        12.25          12.25
     RUNOFF VOLUME    (mm)=     104.74        26.67          98.81
     TOTAL RAINFALL   (mm)=     106.74       106.74         106.74
     RUNOFF COEFFICIENT   =       0.98         0.25           0.93

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  47.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0202):     0.02   0.007    12.25    98.81
      + ID2= 2 (  0003):     0.07   0.011    12.32    87.55
        ================================================
        ID = 3 (  0004):     0.09   0.017    12.25    90.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0005)|   Area    (ha)=   0.09
|ID= 1 DT= 5.0 min |   Total Imp(%)=  82.00   Dir. Conn.(%)=  82.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.07         0.02
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      24.49        15.00
     Mannings n           =      0.013        0.250

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


                          ---- TRANSFORMED 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    1.71 |12.250  130.65 | 18.33    1.92
               0.167    0.00 | 6.250    1.71 |12.333   15.39 | 18.42    1.92
               0.250    0.00 | 6.333    1.92 |12.417   15.37 | 18.50    1.92
               0.333    1.17 | 6.417    1.92 |12.500   15.37 | 18.58    1.92
               0.417    1.17 | 6.500    1.92 |12.583   15.37 | 18.67    1.92
               0.500    1.17 | 6.583    1.92 |12.667   15.37 | 18.75    1.92
               0.583    1.17 | 6.667    1.92 |12.750   15.37 | 18.83    1.92
               0.667    1.17 | 6.750    1.92 |12.833    7.90 | 18.92    1.92
               0.750    1.17 | 6.833    1.92 |12.917    7.90 | 19.00    1.92
               0.833    1.17 | 6.917    1.92 |13.000    7.90 | 19.08    1.92
               0.917    1.17 | 7.000    1.92 |13.083    7.90 | 19.17    1.92
               1.000    1.17 | 7.083    1.92 |13.167    7.90 | 19.25    1.92
               1.083    1.17 | 7.167    1.92 |13.250    7.90 | 19.33    1.92
               1.167    1.17 | 7.250    1.92 |13.333    5.76 | 19.42    1.92
               1.250    1.17 | 7.333    2.35 |13.417    5.76 | 19.50    1.92
               1.333    1.17 | 7.417    2.35 |13.500    5.76 | 19.58    1.92
               1.417    1.17 | 7.500    2.35 |13.583    5.76 | 19.67    1.92
               1.500    1.17 | 7.583    2.35 |13.667    5.76 | 19.75    1.92
               1.583    1.17 | 7.667    2.35 |13.750    5.76 | 19.83    1.92
               1.667    1.17 | 7.750    2.35 |13.833    4.48 | 19.92    1.92
               1.750    1.17 | 7.833    2.35 |13.917    4.48 | 20.00    1.92
               1.833    1.17 | 7.917    2.35 |14.000    4.48 | 20.08    1.92
               1.917    1.17 | 8.000    2.35 |14.083    4.48 | 20.17    1.92
               2.000    1.17 | 8.083    2.35 |14.167    4.48 | 20.25    1.92
               2.083    1.17 | 8.167    2.35 |14.250    4.48 | 20.33    1.28
               2.167    1.17 | 8.250    2.35 |14.333    3.20 | 20.42    1.28
               2.250    1.17 | 8.333    2.78 |14.417    3.20 | 20.50    1.28
               2.333    1.39 | 8.417    2.78 |14.500    3.20 | 20.58    1.28
               2.417    1.39 | 8.500    2.78 |14.583    3.20 | 20.67    1.28
               2.500    1.39 | 8.583    2.78 |14.667    3.20 | 20.75    1.28
               2.583    1.39 | 8.667    2.78 |14.750    3.20 | 20.83    1.28
               2.667    1.39 | 8.750    2.78 |14.833    3.20 | 20.92    1.28
               2.750    1.39 | 8.833    2.99 |14.917    3.20 | 21.00    1.28
               2.833    1.39 | 8.917    2.99 |15.000    3.20 | 21.08    1.28
               2.917    1.39 | 9.000    2.99 |15.083    3.20 | 21.17    1.28
               3.000    1.39 | 9.083    2.99 |15.167    3.20 | 21.25    1.28
               3.083    1.39 | 9.167    2.99 |15.250    3.20 | 21.33    1.28
               3.167    1.39 | 9.250    2.99 |15.333    3.20 | 21.42    1.28
               3.250    1.39 | 9.333    3.42 |15.417    3.20 | 21.50    1.28
               3.333    1.39 | 9.417    3.42 |15.500    3.20 | 21.58    1.28
               3.417    1.39 | 9.500    3.42 |15.583    3.20 | 21.67    1.28
               3.500    1.39 | 9.583    3.42 |15.667    3.20 | 21.75    1.28
               3.583    1.39 | 9.667    3.42 |15.750    3.20 | 21.83    1.28
               3.667    1.39 | 9.750    3.42 |15.833    3.20 | 21.92    1.28
               3.750    1.39 | 9.833    3.84 |15.917    3.20 | 22.00    1.28
               3.833    1.39 | 9.917    3.84 |16.000    3.20 | 22.08    1.28
               3.917    1.39 |10.000    3.84 |16.083    3.20 | 22.17    1.28
               4.000    1.39 |10.083    3.84 |16.167    3.20 | 22.25    1.28
               4.083    1.39 |10.167    3.84 |16.250    3.20 | 22.33    1.28
               4.167    1.39 |10.250    3.84 |16.333    1.92 | 22.42    1.28
               4.250    1.39 |10.333    4.91 |16.417    1.92 | 22.50    1.28
               4.333    1.71 |10.417    4.91 |16.500    1.92 | 22.58    1.28
               4.417    1.71 |10.500    4.91 |16.583    1.92 | 22.67    1.28
               4.500    1.71 |10.583    4.91 |16.667    1.92 | 22.75    1.28
               4.583    1.71 |10.667    4.91 |16.750    1.92 | 22.83    1.28
```

4.667	1.71	10.750	4.91	16.833	1.92	22.92	1.28
4.750	1.71	10.833	6.62	16.917	1.92	23.00	1.28
4.833	1.71	10.917	6.62	17.000	1.92	23.08	1.28
4.917	1.71	11.000	6.62	17.083	1.92	23.17	1.28
5.000	1.71	11.083	6.62	17.167	1.92	23.25	1.28
5.083	1.71	11.167	6.62	17.250	1.92	23.33	1.28
5.167	1.71	11.250	6.62	17.333	1.92	23.42	1.28
5.250	1.71	11.333	10.25	17.417	1.92	23.50	1.28
5.333	1.71	11.417	10.25	17.500	1.92	23.58	1.28
5.417	1.71	11.500	10.25	17.583	1.92	23.67	1.28
5.500	1.71	11.583	10.25	17.667	1.92	23.75	1.28
5.583	1.71	11.667	10.25	17.750	1.92	23.83	1.28
5.667	1.71	11.750	10.25	17.833	1.92	23.92	1.28
5.750	1.71	11.833	31.59	17.917	1.92	24.00	1.28
5.833	1.71	11.917	31.60	18.000	1.92	24.08	1.28
5.917	1.71	12.000	31.60	18.083	1.92	24.17	1.28
6.000	1.71	12.083	130.64	18.167	1.92	24.25	1.28
6.083	1.71	12.167	130.65	18.250	1.92		

Max.Eff.Inten.(mm/hr)=	130.65	38.54		
over (min)	5.00	5.00		
Storage Coeff. (min)=	0.80 (ii)	2.72 (ii)		
Unit Hyd. Tpeak (min)=	5.00	5.00		
Unit Hyd. peak (cms)=	0.34	0.29		
			TOTALS	
PEAK FLOW (cms)=	0.03	0.00	0.029 (iii)	
TIME TO PEAK (hrs)=	12.25	12.25	12.25	
RUNOFF VOLUME (mm)=	104.74	26.67	90.68	
TOTAL RAINFALL (mm)=	106.74	106.74	106.74	
RUNOFF COEFFICIENT =	0.98	0.25	0.85	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 47.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Appendix F

Pre-Consultation Summary

File No.: PC2026-0029

March 4, 2026

Tamara Nahal
Fotenn Planning + Design
420 O'Connor Street
Ottawa ON
K2P 1W4

Via email: nahal@fotenn.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Site Plan Control Application
2625 Carling Avenue and 1480 Richmond Road

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on February 25, 2026.

Pre-Consultation Preliminary Assessment

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. For your next submission, please submit the required Application Form, together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation or application submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed is requested with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density it is recommended that a subsequent pre-consultation application be submitted.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline

the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

1. **Official Plan**: Inner Urban Transect, Hub Designation, Corridor – Mainstreet, Evolving Overlay

   Lincoln Fields Secondary Plan: Hub Designation

2. **Zoning By-law**:

   Current: Arterial Mainstreet Zone (AM10)

   New: Hub Zone 2 (H2 H(100))

3. Design guidelines:

   Urban Design Guidelines for Drive-Through Facilities

   Urban Design Guidelines for Arterial Mainstreets

4. Landscape requirements:

   a. A Landscape Plan is required as part of a complete application for Site Plan Control.

5. Parking requirements:

   a. The subject site is located within Area Z of Schedule 1A to Zoning By-law 2008-250.Pursuant to Section 101(2), no off-street motor vehicle parking is required to be provided within Area Z.

6. Drive-through facility use:

   a. Official Plan – Hub Designation:

      Policy 4 of Section 6.1.1: Hubs will generally permit residential uses, and will permit such non-residential uses as are consistent with Subsection 6.1.1, Policy 3 h) and:

a) Hubs will generally prohibit automobile-oriented, motor-vehicle-dependent and motor-vehicleprioritizing uses including but not limited to: i) Drive-through facilities.

b. Secondary Plan – Hub Designation:

Policy 4 of Section 2.1 notes:

Where there is a lot containing only a non-residential use that exists prior to the adoption of this Plan that no is longer compliant, the City may consider applications that seek minor changes and alterations without requiring complete compliance with the policies of this Plan, such as maintaining the existing minimum building height, the location of surface parking, or the number of private approaches. In these instances, the City shall ensure:

a) There is a no net increase in surface parking area and spaces;

b) There is a no net loss in soft landscaping and tree planting;

i) A net increase in soft landscaping and tree planting is encouraged;

c) The construction and conveyance of required active transportation facilities, as described in section 3.1, policy (1)(b) and identified on Schedule C – Mobility and Connectivity, as applicable; and

d) Compliance with minimum bicycle parking requirements.

c. Zoning By-law 2008-250:

Arterial Mainstreet Zone: Drive-through facility is a permitted non-residential use.

d. Zoning By-law 2026-50:

Hub Zone 2: does not permit a Drive-through facility.

7. Required Applications:

a. Site Plan Control:

i. Site Plan Control approval is required as the proposal involves the expansion of a drive-through facility (By-law No. 2014-256).

ii. If a Site Plan Control application is submitted prior to the adoption of new Zoning By-law 2026-50, the current Arterial Mainstreet (AM) Zone permits a drive-through use.

b. Permission Application:

i. If a Site Plan Control application is submitted following the adoption of new Zoning By-law 2026-50, the proposed use becomes legal non-conforming and a Permission application to the Committee of Adjustment will be required in order for the Site Plan application to proceed.

ii. The Permission application should include a detailed description outlining how both drive-throughs will operate without conflict, including site circulation and parking impacts across the property.

8. Application Timing:

    a. Submission of a Site Plan Control application prior to March 11, 2026, with application to be reviewed under current Zoning By-law 2008-250 due to transition policy in By-law 2026-50.

    b. Submission of Site Plan Control and Permission applications after March 11, 2026, with applications to be reviewed under both Zoning By-law 2008-250 and new Zoning By-law 2026-50, in order to permit the expansion of the legal non-conforming drive-through use.

Feel free to contact Jillian Simpson, Planner, for follow-up questions.

Urban Design

Comments:

9. An Urban Design Brief is not required.

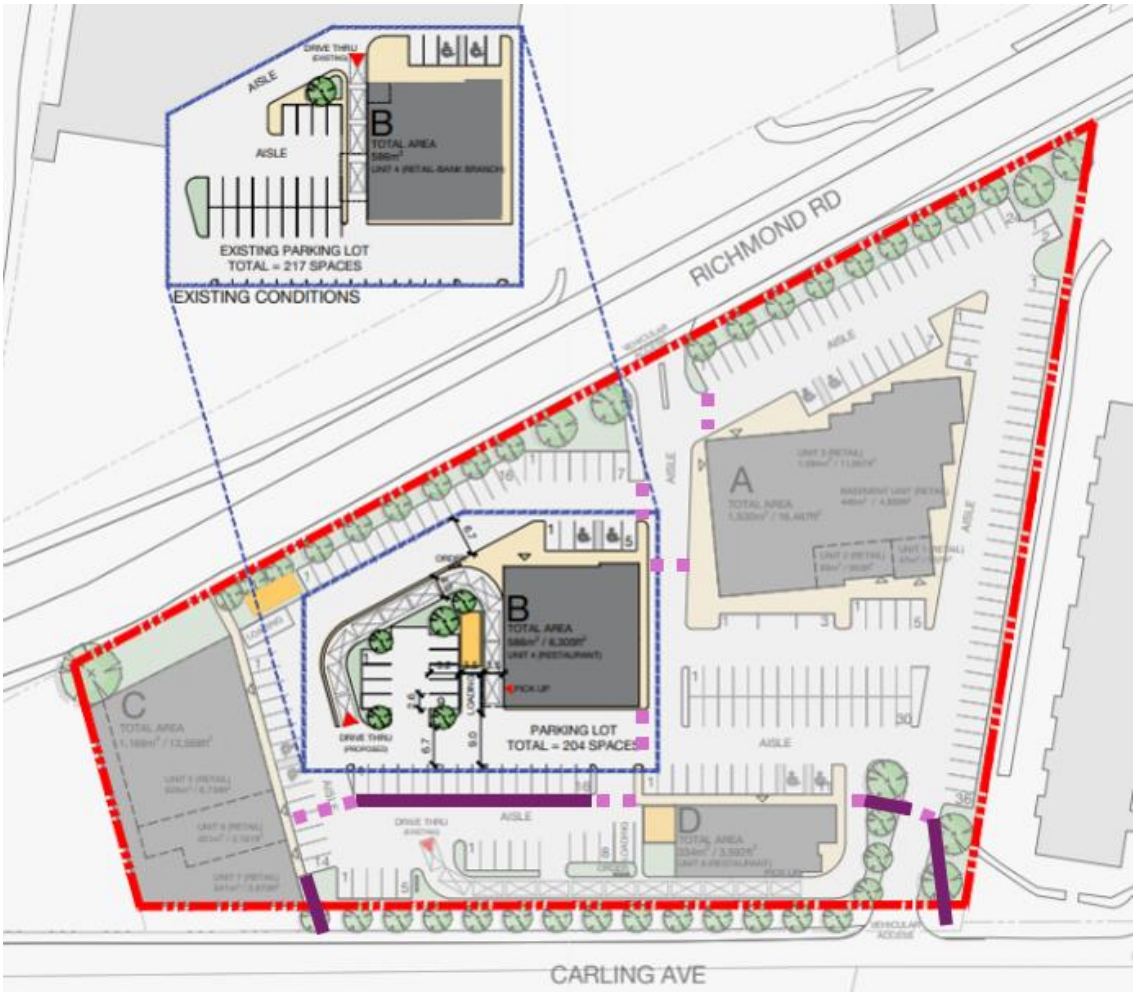
10. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of references (Planning application submission information and materials | City of Ottawa) to prepare these drawings and studies. These include:

    a. Site Plan

    b. Landscape Plan

    c. Building Elevations

11. Please explore the potential to improve pedestrian circulation through the plaza and to public streets. Please see below:



Feel free to contact Nader Kadri, Planner, for follow-up questions.

Engineering

Stormwater Management Design

12. The Stormwater Management Criteria, for the subject site, is to be based on Table 1 Row 2 of the May 2020 Pinecrest Creek Study and the City of Ottawa Sewer Design Guidelines:

    a. A minimum on-site retention of the 10 mm design storm. Refer to the Pinecrest Creek Study for additional details on the SWM design criteria for this site.

    b. The pre-development runoff shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

    c. A calculated time of concentration (cannot be less than 10 minutes).

d. Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.

e. Enhanced level water quality control (80% TSS) removal is required, some of which may be achieved by on-site retention of the first 10 mm rainfall.

f. Stormwater management applies to the area of the site being redeveloped.

13. Confirm if the site is currently controlled by an ICD downstream.

14. When underground storage is used for stormwater, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. We therefore require that when using the modified rational method an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate. The consultant may also choose to model the stormwater flows using a dynamic stormwater model.

Sewer (Sanitary & Storm) Design

15. A capacity review of the private sanitary and storm sewers will be required to demonstrate that there is adequate residual capacity to accommodate the new proposal.

16. The existing sanitary and storm sewers on private property may be reused if:

    a. They are confirmed to be in an adequate condition and

    b. They are adequately sized for the proposed release rates.

17. Please apply the wastewater design flow parameters in Technical Bulletin PIEDTB-2018-01.

18. Provide existing service information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

19. Connections to trunk sewers and easement sewers are typically not permitted.

20. Provide information on the monitoring manhole requirements – should be located in an accessible location on private property near the property line (ie. Not in a parking area).

21. Sewer connections to be made above the springline of the sewermain as per:

    a. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

b. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain.

c. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain.

d. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

Watermain Design

22. Boundary Conditions - civil consultant to request boundary conditions from the City's assigned Project Manager, Development Review. Water boundary conditions request must include the location of the service and the expected loads required by the proposed development. Please provide all the following information:

    a. Location of service (show on a plan or map)

    b. Type of development

    c. Average daily demand: ___ l/s.

    d. Maximum daily demand: ___l/s.

    e. Maximum hourly daily demand: ___ l/s.

    f. Required fire flow.

    g. Supporting Calculations for all demands listed above and required fire flow as per Fire Underwriter Surveys.

23. Provide a watermain system analysis demonstrating adequate pressure in the private watermain as per section 4.2.2 of the Water Distribution Guidelines.

24. Demonstrate adequate hydrant coverage for fire protection. Please review Technical Bulletin ISTB-2018-02, Appendix I Table 1 – maximum flow to be considered from a given hydrant.

25. The existing water service to your building may be reused if:

    a. It is confirmed to be in an adequate condition and

    b. It is adequately sized for the proposed demands.

26. Two watermains separated by an isolation valve is required to avoid the creation of a vulnerable service area for proposed developments with a basic day water demand greater than 50m3/day. Please confirm the demand for your proposal and

approximate demand for the existing buildings on this property. If the combined demands exceed 50m3/day, a second service connection will be required off of Richmond Road.

27. Please note that no new connection to the existing backbone watermains on Carling Avenue will be accepted. If a new watermain connection is required, it shall be made off Richmond Road.

28. Please note that a perimeter meter may be required for this site if the total private watermain length exceeds 150 m.

Additional Comments

29. The applicant is notified that Capital Works Projects (resurfacing) are scheduled on Richmond in 4-7 years and Carling Avenue in 1-2 years. Coordination with the City will be required to ensure that, if road cuts are proposed in the right of way, that they are completed before the typical three-year moratorium. If road cuts can't be advanced before the scheduled moratorium, the applicant will need to apply for a road cut restriction waiver from the City's Road Cut Permit Office. The City has the right to conditionally approve or deny Moratorium applications, and require additional level of resurfacing depending on the geometry and location of the road cut.

30. Given the limited scope of work proposed in the preliminary Conceptual Plan (the drive-through reconfiguration and potential service upsizing or renewal) a Geotechnical Investigation is not considered necessary for this Site Plan application at this time. However, should the project scope increase during the design stage, these reports may be requested at our discretion.

Feel free to contact Jean-Miguel Roy, Infrastructure Project Manager, for follow-up questions.

Transportation

Comments:

31. Follow Transportation Impact Assessment Guidelines:

    a. Note that the TIA Guidelines have been updated, the changes are available on the City's website.

    b. Update Screening Form to provide the net number if trips generated by the site (i.e. proposed new trips minus existing trips by the bank use) and send to josiane.gervais@ottawa.ca for review. Also note the driveway to the site is existing and not proposed, therefore the third safety trigger response should be "no".

c. A Transportation Impact Assessment may be required. Please submit the Scoping/Forecasting report to josiane.gervais@ottawa.ca at your earliest convenience. The applicant is responsible to submit the Scoping Report prior to application and must allow for a 14 day circulation period. If required, the Strategy Report (including Synchro files) must be submitted with the formal submission to deem complete. The applicant is strongly encouraged to submit the Strategy Report to the TPM prior to formal submission and allow for a 14 day circulation period.

32. Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's Schedule C16.

    a. 44.5m ROW protection along Carling, from Richmond to Bronson (measured as 22.25m from the centerline).

    b. 37.5m ROW protection along Richmond, from Hwy 417 to Kichi Zibi Mikan Pky (measured as 18.75 from centerline). [Note: The revised Schedule C16 currently going through OPA, D01-01-25-0022, shows a ROW protection of 30m along Richmond, between Carling and Kichi Zibi Mikan.]

       Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management. If an exception is sought, send justification via email to josiane.gervais@ottawa.ca.

33. ROW must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW will be required prior to registration of the SP agreement. Additional information on the conveyance process can be provided upon request.

34. Transportation Master Plan (2025) includes:

    a. Carling Avenue along property frontage identified as a Transit Priority Corridor (Priority Network)

    b. Carling Avenue along property frontage identified Road Urbanization and Mainstreet Improvements (Priority Network)

35. Nearby planned construction and infrastructure projects include:

    a. Road resurfacing along Carling, planned in 1-2 years, PM not yet assigned.

    b. Road resurfacing along Richmond, planned in 4-7 years, PM not yet assigned.

    c. Sidewalk renewal along Richmond, planned this year, PM: Kyle Delaney.

d. Note the City imposes a moratorium on pavement that is 3 years old or less. Consultation with Infrastructure & Water Services Dept. is strongly encouraged for coordination of construction.

36. There are two bus stops along the property frontages to Richmond and Carling. Upgrades to existing transit stop #6451 to include paved shelter pad to the specifications of the City may be required.

37. As the proposed site is commercial and for general public use, AODA legislation applies.

    a. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.

    b. Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).

38. On site plan:

    a. Ensure site accesses meet the City's Private Approach Bylaw.

    b. Show all details of the roads abutting the site; include such items as pavement markings, signage, accesses, on-street parking, and/or sidewalks.

    c. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.

    d. Turning movement diagrams required for internal movements (loading areas, garbage).

    e. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).

    f. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)

Feel free to contact Josiane Gervais, Transportation Project Manager, for follow-up questions.

Environment

Comments:

39. There are no triggers for an Environmental Impact Study.

40. Bird-Safe Design Guidelines - Please review and incorporate bird safe design elements, where feasible. Some of the risk factors include glass and related design

traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here: https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf

41. Please consider if there are features that can be added reduce the urban heat island effect (see OP 10.3). For example, this impact can be reduced by adding large canopy trees, green rooves or vegetation walls, or incorporating building with low heat absorbing materials.

Feel free to contact Matthew Hayley, Environmental Planner, for follow-up questions.

Forestry

Comments:

42. Please submit a Tree Conservation Report (TCR) for review. TCR guidelines are provided below. An approved TCR is required as part of the Site Plan application and must identify the proposed protection measures for the existing trees along Carling Avenue. Please see below for the approximate area that needs to be protected.



43. A Landscape plan is required for the Site Plan application and should illustrate how the site will be enhanced and improved with new landscaping. The applicant is asked to create new tree planting spaces and plant trees that will mitigate the heat island effect.

44. The following Tree Conservation Report (TCR) guidelines have been adapted from the Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

    a. A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City.

        i. An approved TCR is a requirement of Site Plan approval.

    b. Any removal of privately-owned trees 10cm or larger in diameter within the urban area, or city-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

    c. The TCR must contain 2 separate plans:

        i. Plan/Map 1 - show existing conditions with tree cover information.

        ii. Plan/Map 2 - show proposed development with tree cover information.

    d. The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition.

        i. For ease of review, the Planning Forester suggests that all trees be numbered and referenced in an inventory table.

    e. Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)

    f. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.

        i. Compensation may be required for the removal of city owned trees.

    g. The removal of trees on a property line will require the permission of both property owners.

    h. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available on the Tree Protection Specification or by searching Ottawa.ca.

        i. The location of tree protection fencing must be shown on the plan.

        ii. Show the critical root zone of the retained trees.

i. As per the Official Plan §4.8.2, the retention of healthy trees must be prioritized wherever possible. Please seek opportunities for retention of trees that will contribute to the design and function of the site.

45. The following Landscape Plan (LP) guidelines have been adapted from Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

a. Please ensure any retained trees are shown on the LP.

b. Minimum Setbacks

i. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.

ii. Maintain 2.5m from curb.

iii. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.

iv. Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.

v. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

b. Tree specifications

i. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.

ii. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.

c. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.

d. No root barriers, dead-man anchor systems, or planters are permitted.

e. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

f. Hard surface planting

i. If there are hard surface plantings, a planting detail must be provided.

ii. Curb style planter design is highly recommended.

iii. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

c. Trees are to be planted at grade.

d. Soil Volume - Please demonstrate as per the **Landscape Plan Terms of Reference** that the available soil volumes for new plantings will meet or exceed the following:

Tree Type/Size	Single Tree Soil Volume (m^3)	Multiple Tree Soil Volume (m^3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

   i. It is strongly suggested that the proposed species list include a column listing the available soil volume.

e. Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.

f. The City requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.

g. Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. **Please provide a projection of the future canopy cover for the site to 40 years.**

Feel free to contact Julian Alvarez-Barkham, Forester, for follow-up questions.

Parkland

Comments:

46. In accordance with Parkland Dedication By-law No. 2022-280, parkland dedication is not required for a change of use from one commercial use to another where there is no net increase in gross floor area.

47. Please note, if the land use changes or gross floor area changes, then the parkland dedication requirement, and form will be re-evaluated accordingly.

Feel free to contact Samantha Gatchene, Parks Planner, for follow-up questions.

Other

48. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.

    a. The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. The timing of an updated report to Committee is unknown at this time, and updates will be shared when they are available.

    b. Please refer to the HPDS information at ottawa.ca/HPDS for more information.

Submission Requirements and Fees

1. Site Plan Control, Complex Application
    a. Additional information regarding fees related to planning applications can be found here.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.
3. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Yours Truly,
Jillian Simpson, MCIP RPP

Encl. Feedback Form – Phase 1
Study Plan and Identification List
List of Technical Agencies to Consult
HPDS Example Checklist
HPDS Overview for Applicants

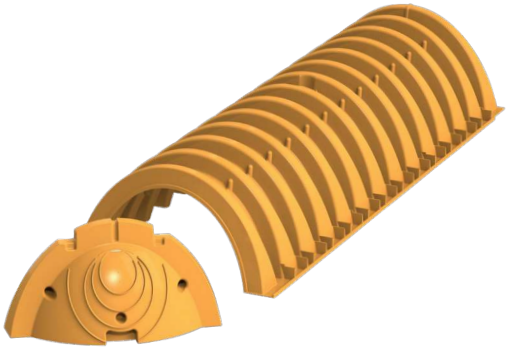
c.c. Jean-Miguel Roy, Infrastructure Project Manager
Alex Polyak, Senior Infrastructure Project Manager
Josiane Gervais, Transportation Project Manager
Stream Shen, Planner III
Nader Kadri, Planner III, Urban Design
Matthew Hayley, Planner III, Environment
Samantha Gatchene, Planner II, Parks
Julian Alvarez-Barkham, Planning Forester

Appendix G

StormTech Chambers Information

StormTech® SC-310 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



Nominal Chamber Specifications
(not to scale)

Size (L x W x H)
85.4" x 34" x 16"
2170 mm x 864 mm x 406 mm

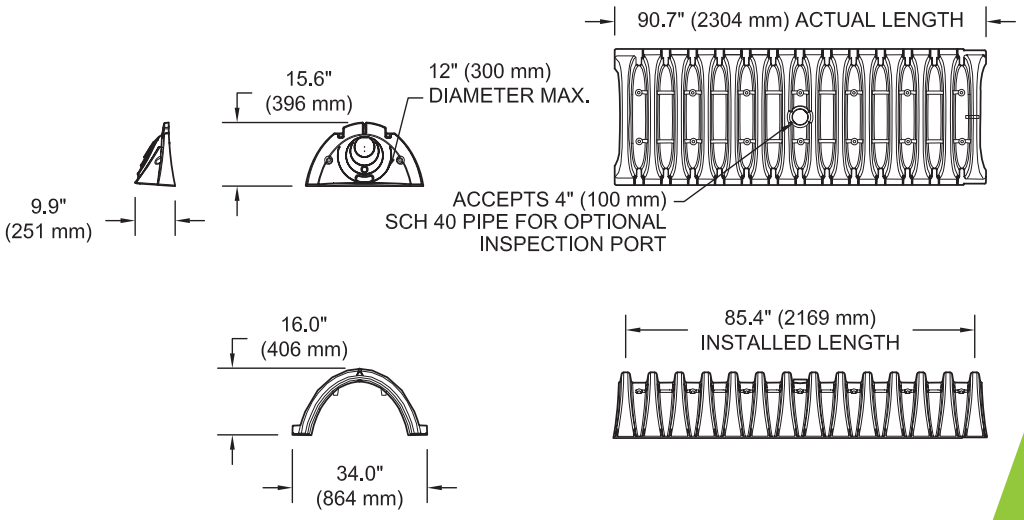
Chamber Storage
14.7 ft³ (0.42 m³)

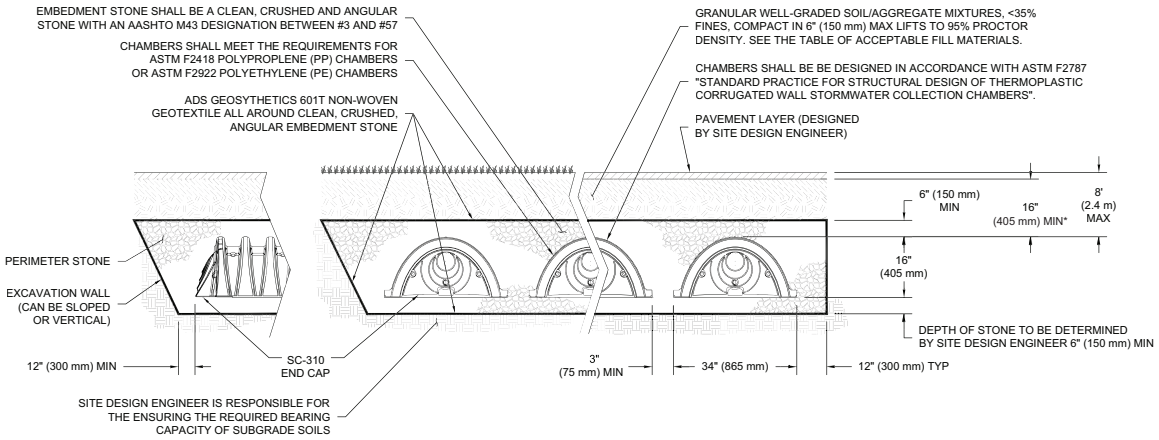
Min. Installed Storage*
29.3 ft³ (0.83 m³)

Weight
37.0 lbs (16.8 kg)

Shipping
55 chambers/pallet
108 end caps/pallet
18 pallets/truck

*Assumes 6" (150 mm) stone above and below chambers and 40% stone porosity.





ADS StormTech™

StormTech SC-310 Specifications

Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 6” (150 mm) Stone Base Under Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
28 (711)	14.70 (0.416)	29.34 (0.831)
27 (686)	14.70 (0.416)	28.60 (0.810)
26 (660)	Stone Cover 14.70 (0.416)	27.87 (0.789)
25 (635)	14.70 (0.416)	27.14 (0.769)
24 (610)	14.70 (0.416)	26.41 (0.748)
23 (584)	14.70 (0.416)	25.68 (0.727)
22 (559)	14.70 (0.416)	24.95 (0.707)
21 (533)	14.64 (0.415)	24.18 (0.685)
20 (508)	14.49 (0.410)	23.36 (0.661)
19 (483)	14.22 (0.403)	22.47 (0.636)
18 (457)	13.68 (0.387)	21.41 (0.606)
17 (432)	12.99 (0.368)	20.25 (0.573)
16 (406)	12.17 (0.345)	19.03 (0.539)
15 (381)	11.25 (0.319)	17.74 (0.502)
14 (356)	10.23 (0.290)	16.40 (0.464)
13 (330)	9.15 (0.260)	15.01 (0.425)
12 (305)	7.99 (0.227)	13.59 (0.385)
11 (279)	6.78 (0.192)	12.13 (0.343)
10 (254)	5.51 (0.156)	10.63 (0.301)
9 (229)	4.19 (0.119)	9.11 (0.258)
8 (203)	2.83 (0.081)	7.56 (0.214)
7 (178)	1.43 (0.041)	5.98 (0.169)
6 (152)	0	4.39 (0.124)
5 (127)	0	3.66 (0.104)
4 (102)	Stone Foundation 0	2.93 (0.083)
3 (76)	0	2.19 (0.062)
2 (51)	0	1.46 (0.041)
1 (25)	0	0.73 (0.021)

Note: Add 0.73 ft³ (0.021 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Foundation Depth in. (mm)		
		6 (150)	12 (300)	18 (450)
SC-310 Chamber	14.7 (0.42)	29.30 (0.83)	33.7 (0.95)	38.1 (1.08)

Note: Assumes 6” (150 mm) stone above chambers, 3” (76 mm) row spacing and 40% stone porosity.

Amount of Stone Per Chamber

English Tons (yds³)	Stone Foundation Depth		
	6”	12”	18”
SC-310	1.9 (1.4)	2.5 (1.8)	3.1 (2.2)
Metric Kilograms (m³)	**150 mm**	**300 mm**	**450 mm**
SC-310	1724 (1.0)	2268 (1.3)	2812 (1.7)

Note: Assumes 6” (150 mm) of stone above and 3” (76 mm) between chambers.

Volume Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6 (150)	12 (300)	18 (450)
SC-310	2.6 (2.0)	3.0 (2.3)	3.4 (2.6)

Note: Assumes 3” (76 mm) of row separation and 6” (150 mm) of stone above the chambers and 16” (400 mm) of cover. The volume of excavation will vary as depth of cover increases.

ADS StormTech products, manufactured in accordance with ASTM F2418 or ASTMF2922, comply with all requirements in the Build America, Buy America (BABA) Act.

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ADS StormTech™

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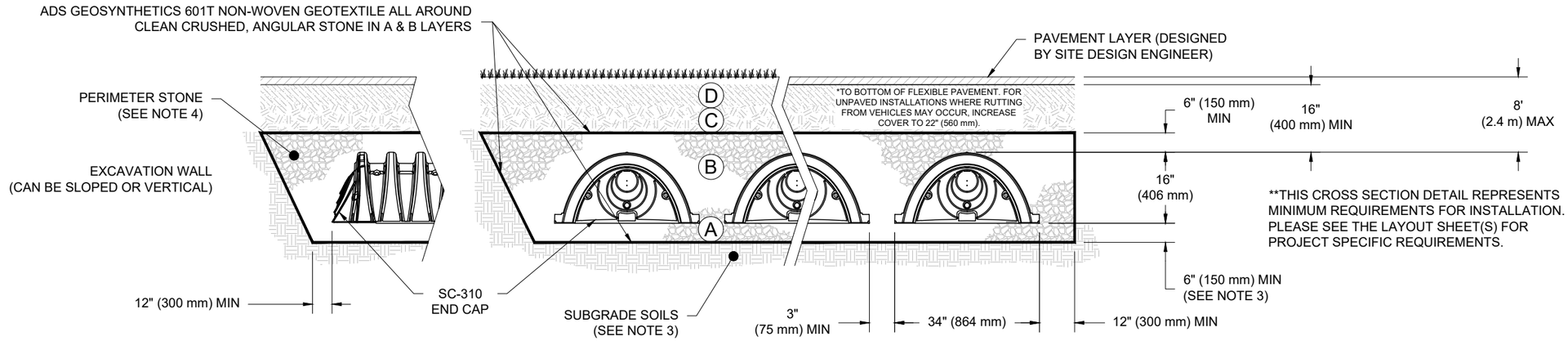
adspipe.com
800-821-6710

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	3.25	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 16" (400 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 325 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

STANDARD CROSS SECTION
SC-310 CHAMBER
STORMTECH

DATE: 02/17/2025 | DRAWN: SMW | CHECKED: JLM
DRAWING #: 721-320

DATE	DRWN	CHKD	DESCRIPTION

StormTech® Chamber System
1-800-821-6710 | WWW.STORMTECH.COM

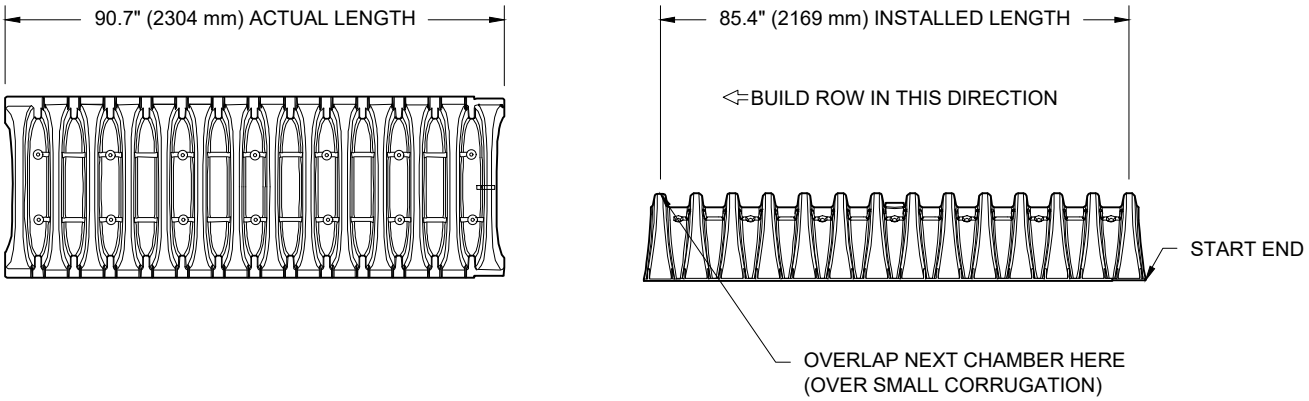
4640 TRUEMAN BLVD
HILLIARD, OH 43026

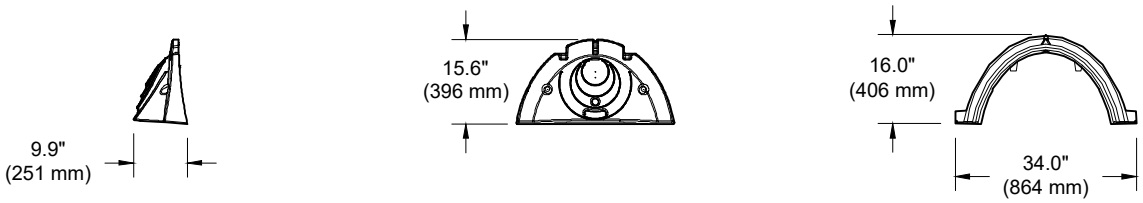
ADS

THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S PRIOR APPROVAL. EOR SHALL REVIEW THIS DRAWING PRIOR TO BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD ("EOR") OR OTHER PROJECT REPRESENTATIVE. THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S

SC-310 TECHNICAL SPECIFICATION

NTS



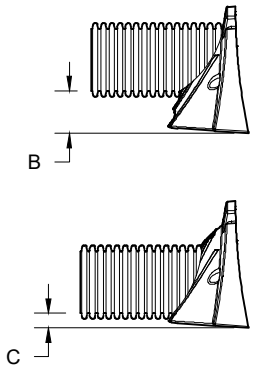


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	29.34 CUBIC FEET	(0.83 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (150 mm) ABOVE AND BELOW CHAMBER; 3" (75 mm) BETWEEN CHAMBERS

PART #	STUB	B	C
SC310EPE06TPC	6" (150 mm)	5.8" (147 mm)	---
SC310EPE06BPC		---	0.5" (13 mm)
SC310EPE08TPC	8" (200 mm)	3.5" (89 mm)	---
SC310EPE08BPC		---	0.6" (15 mm)
SC310EPE10TPC	10" (250 mm)	1.4" (36 mm)	---
SC310EPE10BPC		---	0.7" (18 mm)
SC310ECEZ*	12" (300 mm)	---	0.9" (23 mm)



ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL; PRE-CORED END CAPS END WITH "PC"

TECHNICAL SPECIFICATIONS
SC-310 CHAMBER

DRAWN: SMW
CHECKED: JLM
DATE: 01/15/25
DRAWING #: 721-310

StormTech® Chamber System

1-800-821-6710
WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

ADS

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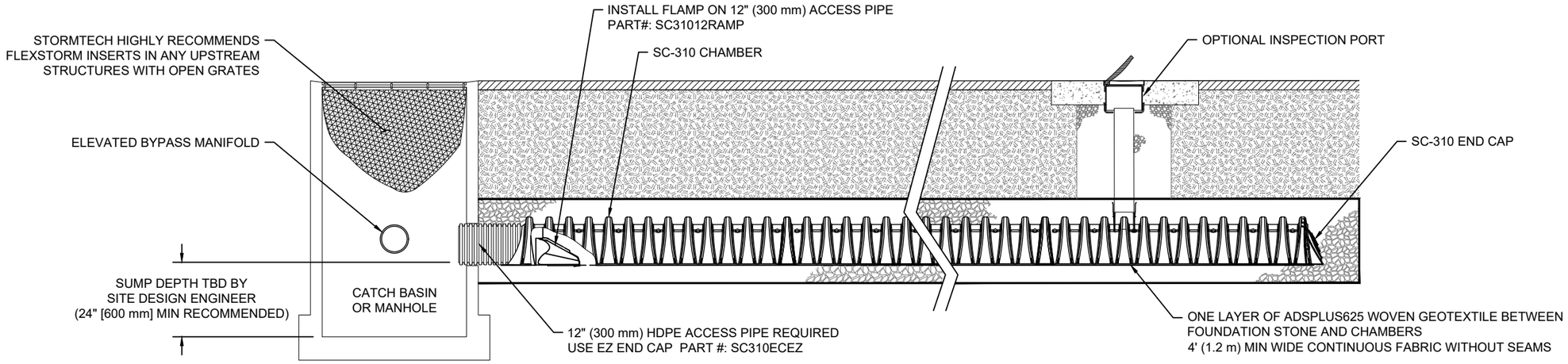


SC-310 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

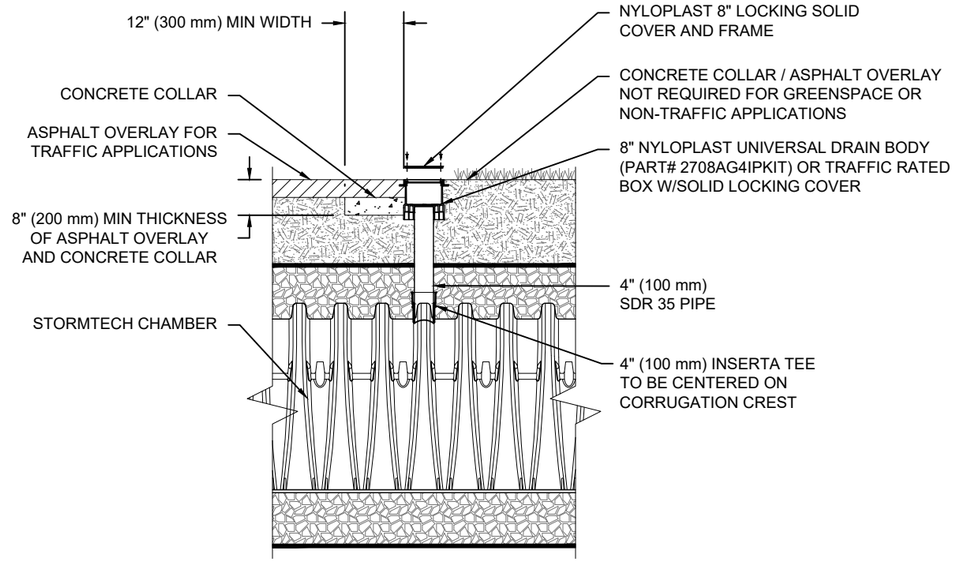
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL
(SC SERIES CHAMBER)
NTS

SC-310
ISOLATOR ROW PLUS DETAILS

DATE: 10/29/20 | DRAWN: ALI | CHECKED: ALI
PROJECT #:

DATE	DRWN	CHKD	DESCRIPTION
12/15/23	AYT		

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

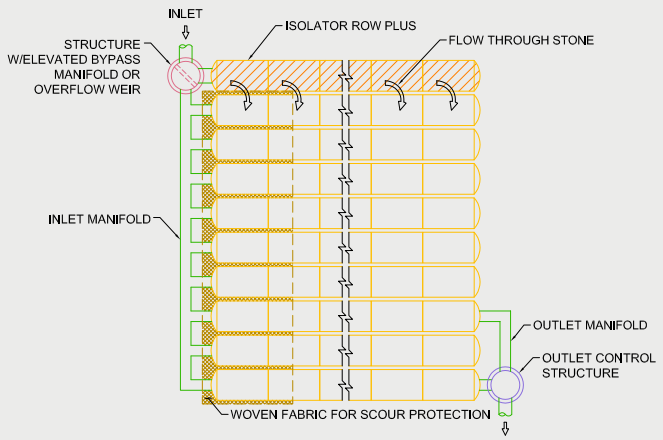
Isolator® Row Plus

The StormTech Isolator Row Plus is an enhancement to our proven water quality treatment system. This updated system is an NJCAT verified water quality treatment device that can be incorporated into any system layout.

Features

- Isolator Row Plus is now NJCAT verified. As a Manufactured Treatment Device it achieves over 80% TSS removal by filtration NJDEP Laboratory Protocol Assessment NJCAT Technology Verification.
- A patented Flamp™ (Flared End Ramp) provides a smooth transition from pipe invert to fabric bottom. The Flamp is attached to the inlet pipe inside the chamber end cap and improves chamber function over time by distributing sediment and debris that would otherwise collect at the inlet. It also serves to improve the fluid and solid flow back into the inlet pipe during maintenance and cleaning.
- Proprietary ADS Plus fabric maintains durability and sediment removal while allowing for higher water quality flow rates. A single layer of ADS Plus fabric is placed between the angular base stone and the Isolator Row Plus chambers.

Schematic of the StormTech Isolator Row Plus System



Technology Descriptions

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume or a flow basis. An upstream manhole not only provides access to the Isolator Row Plus but includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with either an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the StormTech chamber system it is either infiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

Summary of Verified Claims[1]

Treatment Rate (gpm/ft²)	4.1
Underlying Geotextile Layers	1
NJDEP Test Sediment	D50=75um
Mean Particle Concentration (mg/L)	200
TSS Removal Efficiency	>80%

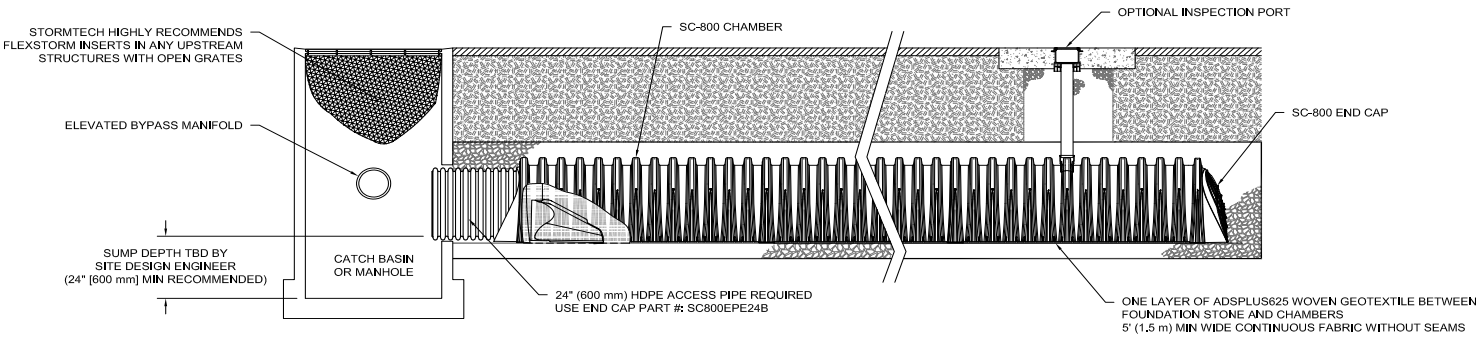
[1] Verification testing of the StormTech SC-740 Isolator Row PLUS in accordance with NJDEP Laboratory protocol to access total suspended solids removal by filtration manufactured treatment device, 2013



ADS StormTech™

adspipe.com
800-821-6710

StormTech Isolator Row Plus (not to scale)



Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By "isolating" sediment to just one row of the StormTech system, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout.

Maintenance is accomplished with the JetVac® process. The JetVac process utilizes a high-pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediment. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency.

StormTech Isolator Row Plus

Chamber Model	Chamber Storage	Chamber Footprint	Treatment Rate
SC-160LP	15.0 cf (0.42 m^3)	11.45 sf (1.06 m^2)	0.11 cfs (3.11 L/s)
SC-310	31.0 cf (0.88 m^3)	17.7 sf (1.64 m^2)	0.16 cfs (4.53 L/s)
DC-780	78.4 cf (2.22 m^3)	27.8 sf (2.58 m^2)	0.26 cfs (7.36 L/s)
SC-800	81.0 cf (2.29 m^3)	27.3 sf (2.54 m^2)	0.25 cfs (7.1 L/s)
MC-3500	175.0 cf (4.96 m^3)	42.9 sf (3.99 m^2)	0.40 cfs (11.32 L/s)
MC-4500	162.6 cf (4.60 m^3)	30.1 sf (2.80 m^2)	0.28 cfs (7.93 L/s)
MC-7200	267.3 cf (7.57 m^3)	50.0 sf (4.65 m^2)	0.45 cfs (12.74 L/s)

Installation

Installation of the stormwater treatment unit(s) shall be preformed per manufacture's installation instructions. Such instructions can be obtained by calling Advanced Drainage Systems Inc. at (800) 821-6710 or by logging on to adspipe.com.

ADS StormTech™

adspipe.com
800-821-6710

ADS "Terms and Conditions of Sale" are available on the ADS website, www.adspipe.com
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Appendix H

Clean Water Works Inc. Pre-Construction CCTV Inspection Report

Ottawa (Head Office)
1800 Bantree Street
Ottawa, Ontario K1B 5L6
☎ 613.745.2444
613.745.9994

Montreal
7562, Côte-de-Liesse
St-Laurent, Quebec H4T 1E7
☎ 514.738.2666
514.738.9762

www.cwwcanada.com
1.866.695.0155

CLEAN WATER WORKS INC.

INTEGRATED SEWER SOLUTIONS

1480 RICHMOND RD

Ottawa, Ontario

SEWER CCTV INSPECTION REPORT

Report ID
153600SA1

Sewer Use
Sanitary

Completion Date
June 22, 2026

Inspected Length
86.10 meters

THE WAY IS CLEAR™

- Watermain Swabbing
- Hydro Vacuum Excavation
- CCTV Inspection of Sewers
- Plumbing & Drain Services
- Structural Rehabilitation of Manholes
- Cured-in-Place-Pipe Lining & Spot Repairs
- Grouting, Test & Seal Joints, Manholes & Services
- Lateral Sewer Inspection & Locates From Main
- Sewer Cleaning, Flushing & Pumping

Table of contents

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1. Index of pipes 2
2. Structural rating 3
3. O&M rating 4
4. Pipe summary and condition details 5
5. Vision Report© Legend 13

1. Index of pipes

4 items

Pipe	Upstream	Downstream	Street	Date	Direction	Height	Inspected	Total	Page
BUILDING SANITARY	C.O.	MAIN	Richmond Road	22/06/2026, 9:41 AM	D - Downstream	150	15.9	16.2	5
SAN MH 1 MAIN	SAN MH 1	MAIN	Richmond Road	22/06/2026, 10:34 AM	D - Downstream	200	17.8	18	7
SAN MH 3 SAN MH 1	SAN MH 3	SAN MH 1	Richmond Road	22/06/2026, 10:18 AM	U - Upstream	200	31.5	65	11
SAN MH 3 SAN MH 1	SAN MH 3	SAN MH 1	Richmond Road	22/06/2026, 9:52 AM	D - Downstream	200	20.9	65	9
							Total: 86.1	Total: 164.2	

2. Structural rating

4 items

0 - No Defects (4 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
0	0000	0	BUILDING SANITARY	C.O. --> MAIN	Direction of flow	Richmond Road	5
0	0000	0	SAN MH 1 MAIN	SAN MH 1 --> MAIN	Direction of flow	Richmond Road	7
0	0000	0	SAN MH 3 SAN MH 1	SAN MH 3 --> SAN MH 1	Direction of flow	Richmond Road	9
0	0000	0	SAN MH 3 SAN MH 1	SAN MH 1 --> SAN MH 3	Against flow	Richmond Road	11

3. O&M rating

4 items

5 - Most significant defect grade (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
13	5142	4.3	0	BUILDING SANITARY	C.O. --> MAIN	Direction of flow	Richmond Road	5

4 - Significant (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
16	4126	2.3	0	SAN MH 1 MAIN	SAN MH 1 --> MAIN	Direction of flow	Richmond Road	7

3 - Moderate defect grade (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
33	3A00	3	0	SAN MH 3 SAN MH 1	SAN MH 3 --> SAN MH 1	Direction of flow	Richmond Road	9

2 - Minor to Moderate (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
6	2300	2	0	SAN MH 3 SAN MH 1	SAN MH 1 --> SAN MH 3	Against flow	Richmond Road	11

4. Pipe summary and condition details

Pipe identification

Pipe:	BUILDING SANITARY	**Direction of inspection:**	C.O. --> MAIN
Direction of flow:	C.O. --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Building	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	15.9
Height:	150	**Total length:**	16.2
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Polyvinyl Chloride	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 9:41 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	5	**Peak:**	5
Quick rating:	0000	**Quick rating:**	5142	**Quick rating:**	5142
Score:	0	**Score:**	13	**Score:**	13
Index:	0	**Index:**	4.3	**Index:**	4.3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Upstream
C.O.

Invert
NA

1 **0.00 m**

ACOH - Cleanout House



2 **0.00 m**

MWL - Water Level, 0%

3 **1.00 m** **4**

(S01) LL - Alignment Left, 50%

4 **3.00 m** **4**

(F01) LL - Alignment Left, 50%

5 **15.70 m** **4**

LD - Alignment Down, 25%

6 **15.90 m** **5**

DAGS - Deposits Attached Grease, from 2 o'clock to 11 o'clock, 75%



7 **15.90 m**

MSA - Abandoned Survey, Grease blockage at main



Invert
NA

Downstream
MAIN

4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 1 MAIN	**Direction of inspection:**	SAN MH 1 --> MAIN
Direction of flow:	SAN MH 1 --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	17.8
Height:	200	**Total length:**	18
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 10:34 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	4	**Peak:**	4
Quick rating:	0000	**Quick rating:**	4126	**Quick rating:**	4126
Score:	0	**Score:**	16	**Score:**	16
Index:	0	**Index:**	2.3	**Index:**	2.3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Upstream
SAN MH 1

Invert
NA

1 **0.00 m**

AMH - Manhole, SAN MH 1



2 **0.00 m**

MWL - Water Level, 5%

3 **5.10 m** **4**

LL - Alignment Left, 25%

4 **7.90 m** **2**

(S01) DAGS - Deposits Attached Grease, from 10 o'clock to 3 o'clock, 5%



5 **15.90 m** **2**

(F01) DAGS - Deposits Attached Grease, from 10 o'clock to 3 o'clock, 5%

6 **16.10 m** **2**

DAGS - Deposits Attached Grease, from 4 o'clock to 8 o'clock, 10%



7 **17.80 m**

AEP - End of Pipe, MAIN



Invert
NA

Downstream
MAIN

4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 3 SAN MH 1	**Direction of inspection:**	SAN MH 3 --> SAN MH 1
Direction of flow:	SAN MH 3 --> SAN MH 1	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	20.9
Height:	200	**Total length:**	65
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 9:52 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	3	**Peak:**	3
Quick rating:	0000	**Quick rating:**	3A00	**Quick rating:**	3A00
Score:	0	**Score:**	33	**Score:**	33
Index:	0	**Index:**	3	**Index:**	3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 3 SAN MH 1	**Direction of inspection:**	SAN MH 1 --> SAN MH 3
Direction of flow:	SAN MH 3 --> SAN MH 1	**Direction:**	Against flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	31.5
Height:	200	**Total length:**	65
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 10:18 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

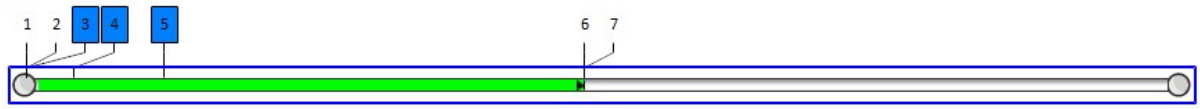
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	2	**Peak:**	2
Quick rating:	0000	**Quick rating:**	2300	**Quick rating:**	2300
Score:	0	**Score:**	6	**Score:**	6
Index:	0	**Index:**	2	**Index:**	2

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Downstream
SAN MH 1

Invert
NA

1 **0.00 m**

AMH - Manhole, SAN 2



2 **0.00 m**

MWL - Water Level, 5%

3 **0.00 m** **2**

DAGS - Deposits Attached Grease, at 6 o'clock, 5%



4 **2.70 m** **2**

DAGS - Deposits Attached Grease, at 6 o'clock, 5%



5 **7.80 m** **2**

DAGS - Deposits Attached Grease, from 7 o'clock to 5 o'clock, 5%



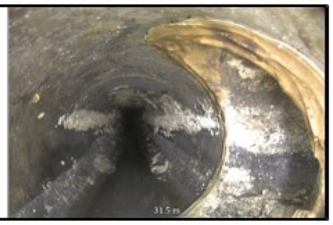
6 **31.50 m**

TF - Tap Factory, at 3 o'clock, Dim.1=150



7 **31.50 m**

AEP - End of Pipe, Reversal complete



Invert
NA

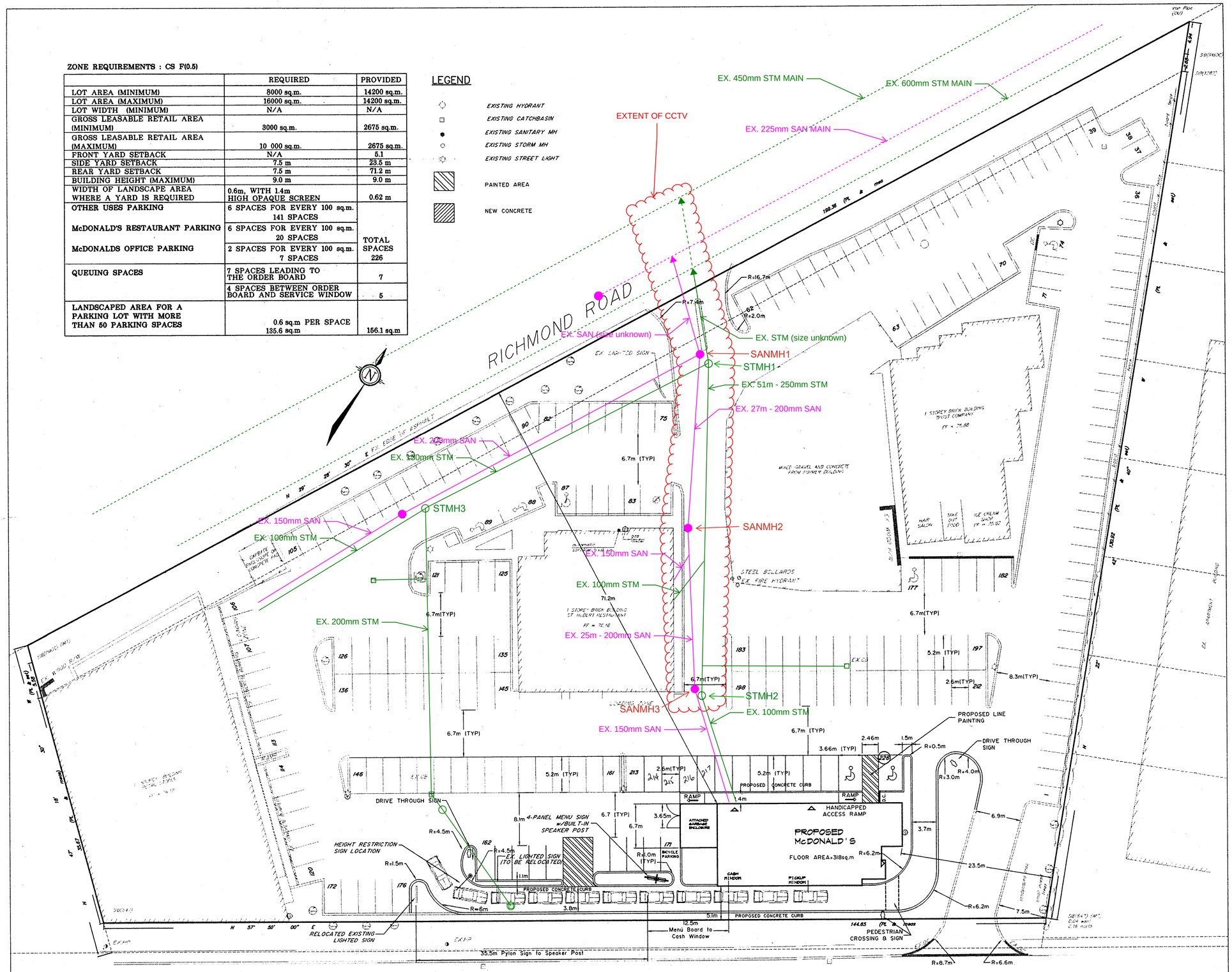
Upstream
SAN MH 3

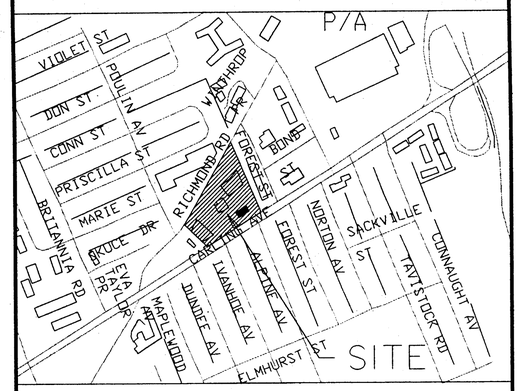
ZONE REQUIREMENTS : CS F(0.5)

	REQUIRED	PROVIDED
LOT AREA (MINIMUM)	8000 sq.m.	14200 sq.m.
LOT AREA (MAXIMUM)	16000 sq.m.	14200 sq.m.
LOT WIDTH (MINIMUM)	N/A	N/A
GROSS LEASABLE RETAIL AREA (MINIMUM)	3000 sq.m.	2675 sq.m.
GROSS LEASABLE RETAIL AREA (MAXIMUM)	10 000 sq.m.	2675 sq.m.
FRONT YARD SETBACK	N/A	5.1
SIDE YARD SETBACK	7.5 m	23.5 m
REAR YARD SETBACK	7.5 m	71.2 m
BUILDING HEIGHT (MAXIMUM)	9.0 m	9.0 m
WIDTH OF LANDSCAPE AREA WHERE A YARD IS REQUIRED	0.6m, WITH 1.4m HIGH OPAQUE SCREEN	0.62 m
OTHER USES PARKING	6 SPACES FOR EVERY 100 sq.m. 141 SPACES	
McDONALD'S RESTAURANT PARKING	6 SPACES FOR EVERY 100 sq.m. 20 SPACES	TOTAL SPACES 226
McDONALDS OFFICE PARKING	2 SPACES FOR EVERY 100 sq.m. 7 SPACES	
QUEUING SPACES	7 SPACES LEADING TO THE ORDER BOARD	7
	4 SPACES BETWEEN ORDER BOARD AND SERVICE WINDOW	5
LANDSCAPED AREA FOR A PARKING LOT WITH MORE THAN 50 PARKING SPACES	0.6 sq.m PER SPACE 135.6 sq.m	166.1 sq.m

LEGEND

- EXISTING HYDRANT
- EXISTING CATCHBASIN
- EXISTING SANITARY MH
- EXISTING STORM MH
- EXISTING STREET LIGHT
- PAINTED AREA
- NEW CONCRETE





KEY PLAN
N.T.S.

SITE PLAN

2625 Carling Ave.
City of Ottawa

Client:

Site Plan Revision For McDonald's Restaurants of Canada

Property Owner:

Toth Equity Limited

256 Rideau Street
Ottawa, Ontario
K1N 5Y3
Tel: (613) 241-6380 Fax: (613) 241-7812

0 5 10 15 20 25 50 metres
1 : 300

1:300

No.	REVISION	DATE	BY
6	REVISED AS PER CITY COMMENTS	JUNE 01/00	MC
5	REVISED AS PER CLIENT COMMENTS	MAY 10/00	GW
4	REVISED AS PER CITY COMMENTS	MAY 2/00	GW
3	ISSUED FOR CITY REVIEW	APR 11/00	GW
2	ISSUED FOR SITE PLAN APPLICATION: McDONALD'S RESTAURANT	FEB 21/00	MC
1	ISSUED FOR CLIENT REVIEW	FEB 15/00	MC

NOVATECH
CONSULTING ENGINEERS & PLANNERS
Suite 17, 77 Auriga Drive
Nepean, Ontario, Canada
K2E 7Z7
Telephone (613)727-1658
Facsimile (613)727-6972
Email: novainfo@novatech-eng.com

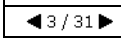
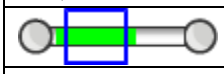
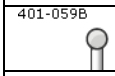
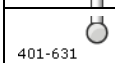
ISSUED
APRIL 2000

PROJECT No.
99183

DRAWING No.
99183-SP

Jun 22, 2000 - 15:59:33 DWG Name: J:\Nova\1999\99183\Sp\99183SP3.dwg Updated By: WLW

Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
	A circled number indicates a structural anomaly. The color of the circle indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
	Indicates that a reverse inspection was carried out, however the camera did not reach the initial inspection hold point. (the hold point of the initial inspection)
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

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Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
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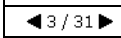
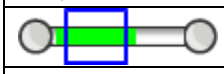
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
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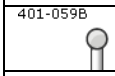
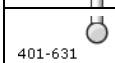
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
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	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

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Ottawa (Head Office)
1800 Bantree Street
Ottawa, Ontario K1B 5L6
☎ 613.745.2444
613.745.9994

Montreal
7562, Côte-de-Liesse
St-Laurent, Quebec H4T 1E7
☎ 514.738.2666
514.738.9762

www.cwwcanada.com
1.866.695.0155

CLEAN WATER WORKS INC.

INTEGRATED SEWER SOLUTIONS

1480 RICHMOND RD

Ottawa, Ontario

SEWER CCTV INSPECTION REPORT

Report ID
153600ST1

Sewer Use
Storm

Completion Date
June 22, 2026

Inspected Length
132.60 meters

THE WAY IS CLEAR™

- Watermain Swabbing
- Hydro Vacuum Excavation
- CCTV Inspection of Sewers
- Plumbing & Drain Services
- Structural Rehabilitation of Manholes
- Cured-in-Place-Pipe Lining & Spot Repairs
- Grouting, Test & Seal Joints, Manholes & Services
- Lateral Sewer Inspection & Locates From Main
- Sewer Cleaning, Flushing & Pumping

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2. Structural rating 3
3. O&M rating 4
4. Pipe summary and condition details 5
5. Vision Report© Legend 13

1. Index of pipes

4 items

Pipe	Upstream	Downstream	Street	Date	Direction	Height	Inspected	Total	Page
BUILDING STORM	C.O.	MAIN	Richmond Road	22/06/2026, 12:12 PM	D - Downstream	100	10.3	10.3	5
STM MH 1 MAIN	STM MH 1	MAIN	Richmond Road	22/06/2026, 11:16 AM	D - Downstream	250	32.5	32.5	7
STM MH 2 STM MH 1	STM MH 2	STM MH 1	Richmond Road	22/06/2026, 11:24 AM	U - Upstream	250	52	52	9
STM MH 3 STM MH 1	STM MH 3	STM MH 1	Richmond Road	22/06/2026, 11:12 AM	D - Downstream	300	37.8	47.6	11
							Total: 132.6	Total: 142.4	

2. Structural rating

4 items

1 - Minor defect grade (1 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
1	1100	1	STM MH 1 MAIN	STM MH 1 --> MAIN	Direction of flow	Richmond Road	7

0 - No Defects (3 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
0	0000	0	BUILDING STORM	C.O. --> MAIN	Direction of flow	Richmond Road	5
0	0000	0	STM MH 2 STM MH 1	STM MH 1 --> STM MH 2	Against flow	Richmond Road	9
0	0000	0	STM MH 3 STM MH 1	STM MH 3 --> STM MH 1	Direction of flow	Richmond Road	11

3. O&M rating

4 items

4 - Significant (2 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
8	4200	4	0	BUILDING STORM	C.O. --> MAIN	Direction of flow	Richmond Road	5
4	4100	4	1	STM MH 1 MAIN	STM MH 1 --> MAIN	Direction of flow	Richmond Road	7

2 - Minor to Moderate (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
2	2100	2	0	STM MH 3 STM MH 1	STM MH 3 --> STM MH 1	Direction of flow	Richmond Road	11

0 - No Defects (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
0	0000	0	0	STM MH 2 STM MH 1	STM MH 1 --> STM MH 2	Against flow	Richmond Road	9

4. Pipe summary and condition details

Pipe identification

Pipe:	BUILDING STORM	**Direction of inspection:**	C.O. --> MAIN
Direction of flow:	C.O. --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Building	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	10.3
Height:	100	**Total length:**	10.3
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Cast Iron	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:		**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 12:12 PM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	4	**Peak:**	4
Quick rating:	0000	**Quick rating:**	4200	**Quick rating:**	4200
Score:	0	**Score:**	8	**Score:**	8
Index:	0	**Index:**	4	**Index:**	4

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Upstream
C.O.

Invert
NA

1 **0.00 m**

ACOH - Cleanout House



2 **0.00 m**

MWL - Water Level, 0%

3 **1.50 m**

TF - Tap Factory, at 3 o'clock, Dim.1=150



4 **2.00 m** 4

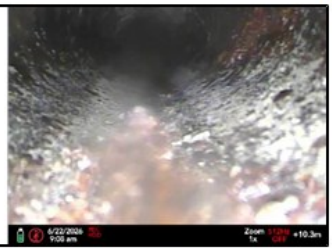
LR - Alignment Right, 50%

5 **9.00 m** 4

LD - Alignment Down, 50%

6 **10.30 m**

MSA - Abandoned Survey, Unable to push mini cam further



Invert
NA

Downstream
MAIN

4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 1 MAIN	**Direction of inspection:**	STM MH 1 --> MAIN
Direction of flow:	STM MH 1 --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	32.5
Height:	250	**Total length:**	32.5
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Polyvinyl Chloride	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:16 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

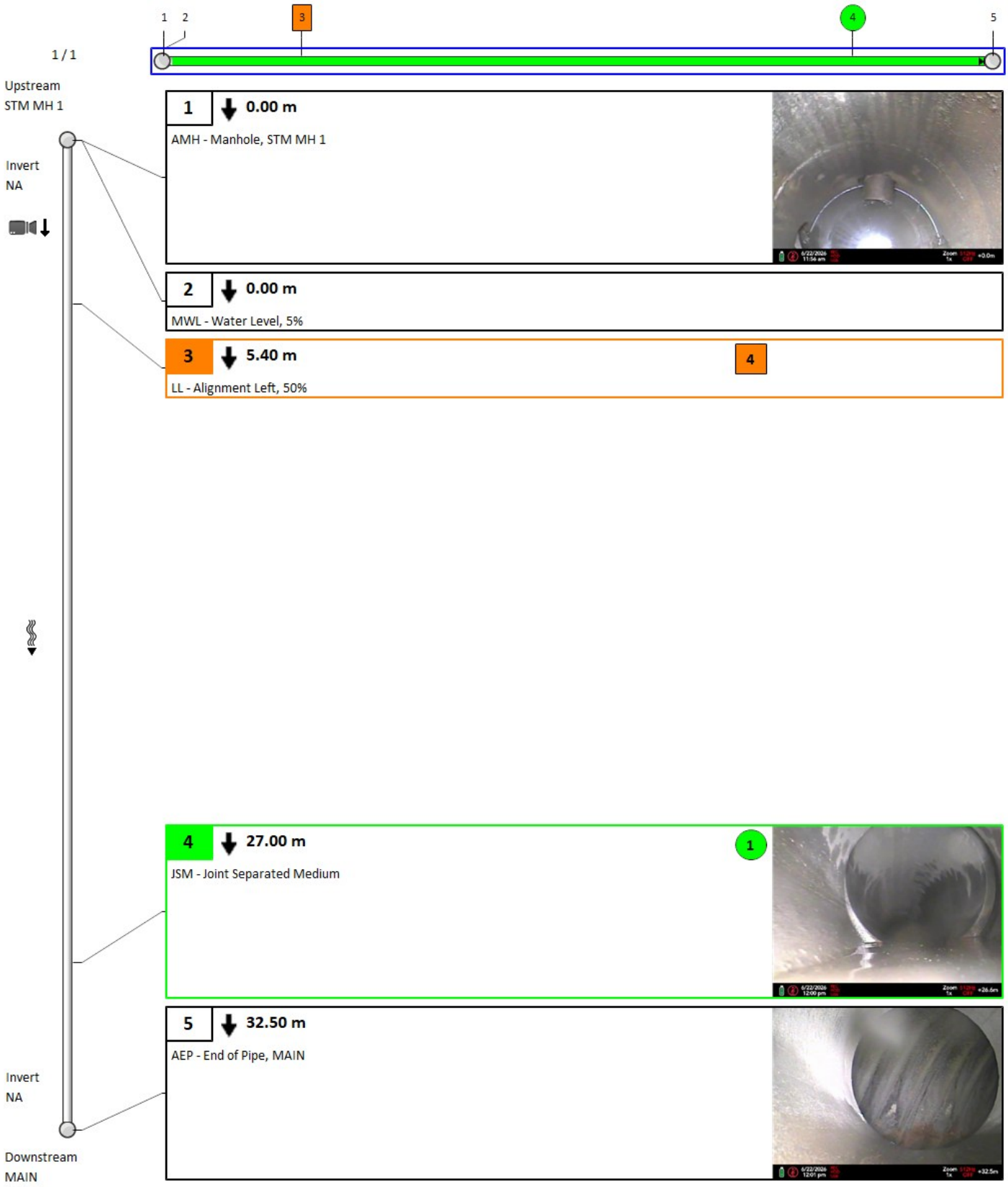
Structural rating		O&M rating		Overall rating	
Peak:	1	**Peak:**	4	**Peak:**	4
Quick rating:	1100	**Quick rating:**	4100	**Quick rating:**	4111
Score:	1	**Score:**	4	**Score:**	5
Index:	1	**Index:**	4	**Index:**	2.5

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 2 STM MH 1	**Direction of inspection:**	STM MH 1 --> STM MH 2
Direction of flow:	STM MH 2 --> STM MH 1	**Direction:**	Against flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	52
Height:	250	**Total length:**	52
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:24 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

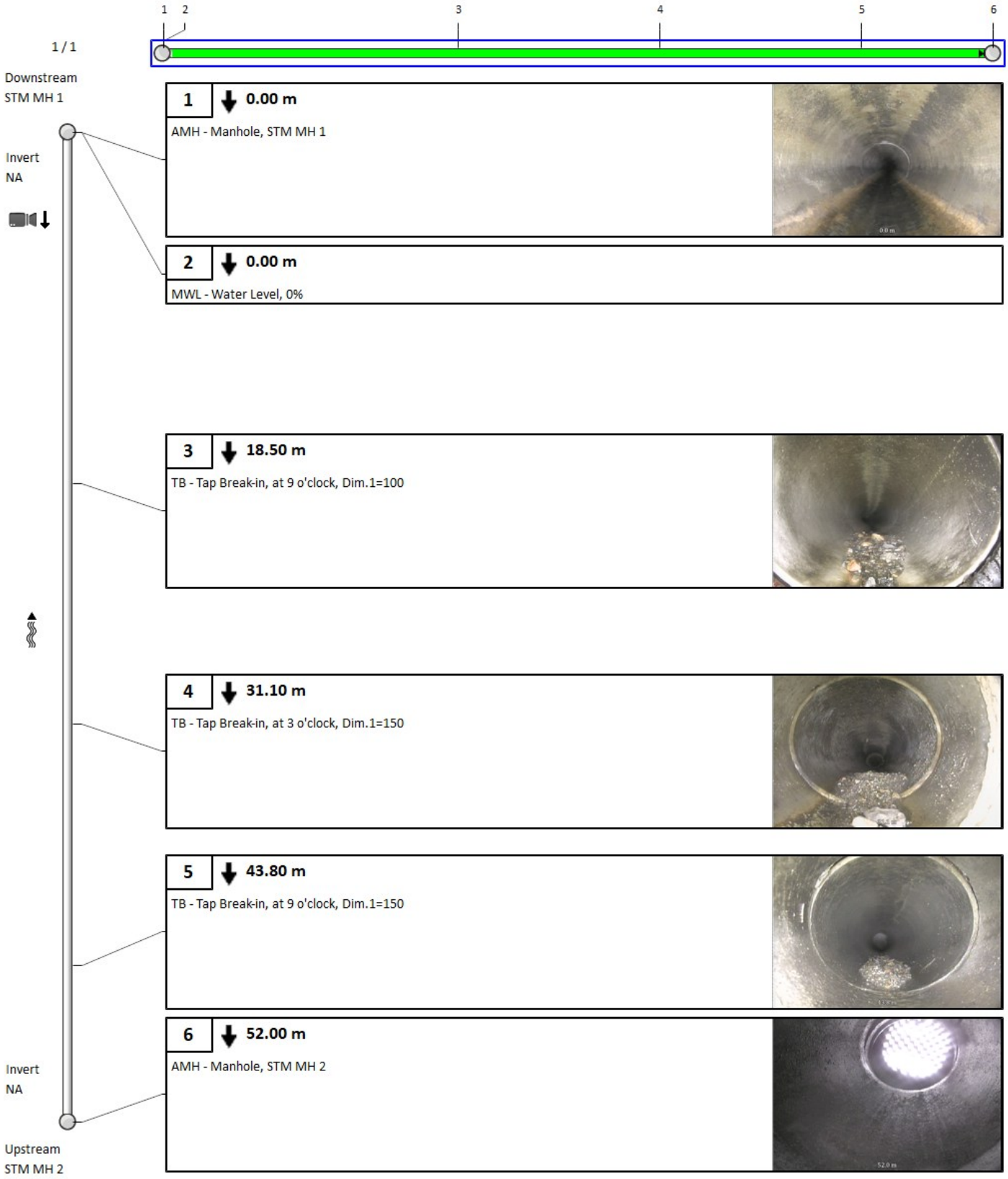
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	0	**Peak:**	0
Quick rating:	0000	**Quick rating:**	0000	**Quick rating:**	0000
Score:	0	**Score:**	0	**Score:**	0
Index:	0	**Index:**	0	**Index:**	0

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 3 STM MH 1	**Direction of inspection:**	STM MH 3 --> STM MH 1
Direction of flow:	STM MH 3 --> STM MH 1	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	37.8
Height:	300	**Total length:**	47.6
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:12 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	2	**Peak:**	2
Quick rating:	0000	**Quick rating:**	2100	**Quick rating:**	2100
Score:	0	**Score:**	2	**Score:**	2
Index:	0	**Index:**	2	**Index:**	2

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Upstream
STM MH 3

Invert
NA

1 **0.00 m**

AMH - Manhole, STM MH 3



2 **0.00 m**

MWL - Water Level, 0%

3 **36.70 m** **2**

DSC - Deposits Settled Compacted, from 4 o'clock to 8 o'clock, 10%



4 **37.80 m**

MSA - Abandoned Survey, Debris cannot go further



Invert
NA

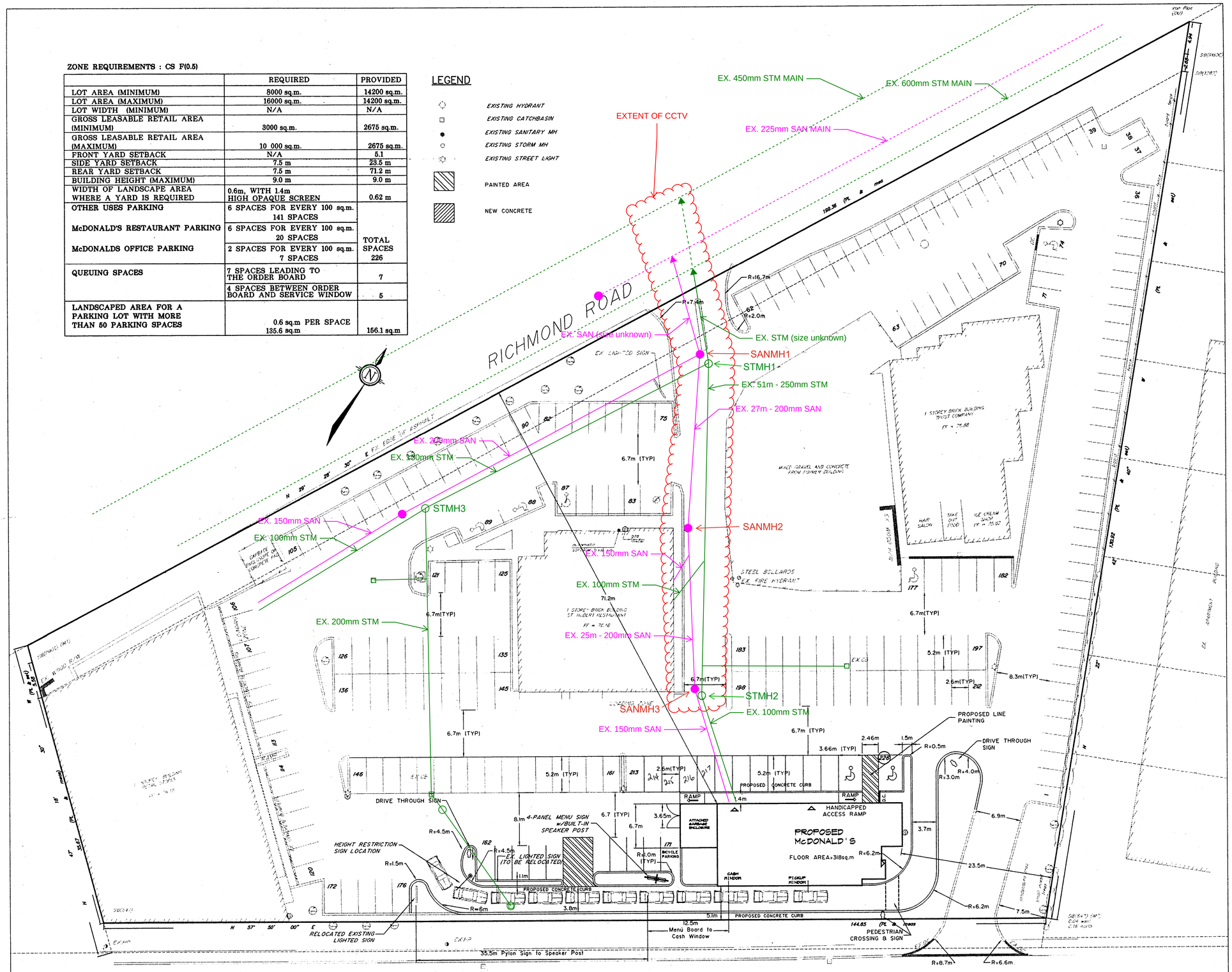
Downstream
STM MH 1

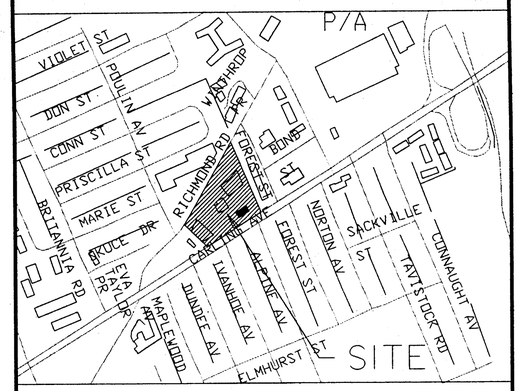
ZONE REQUIREMENTS : CS F(0.5)

	REQUIRED	PROVIDED
LOT AREA (MINIMUM)	8000 sq.m.	14200 sq.m.
LOT AREA (MAXIMUM)	16000 sq.m.	14200 sq.m.
LOT WIDTH (MINIMUM)	N/A	N/A
GROSS LEASABLE RETAIL AREA (MINIMUM)	3000 sq.m.	2675 sq.m.
GROSS LEASABLE RETAIL AREA (MAXIMUM)	10 000 sq.m.	2675 sq.m.
FRONT YARD SETBACK	N/A	5.1
SIDE YARD SETBACK	7.5 m	23.5 m
REAR YARD SETBACK	7.5 m	71.2 m
BUILDING HEIGHT (MAXIMUM)	9.0 m	9.0 m
WIDTH OF LANDSCAPE AREA WHERE A YARD IS REQUIRED	0.6m, WITH 1.4m HIGH OPAQUE SCREEN	0.62 m
OTHER USES PARKING	6 SPACES FOR EVERY 100 sq.m. 141 SPACES	
McDONALD'S RESTAURANT PARKING	6 SPACES FOR EVERY 100 sq.m. 20 SPACES	TOTAL SPACES 226
McDONALDS OFFICE PARKING	2 SPACES FOR EVERY 100 sq.m. 7 SPACES	
QUEUING SPACES	7 SPACES LEADING TO THE ORDER BOARD	7
	4 SPACES BETWEEN ORDER BOARD AND SERVICE WINDOW	5
LANDSCAPED AREA FOR A PARKING LOT WITH MORE THAN 50 PARKING SPACES	0.6 sq.m PER SPACE 135.6 sq.m	166.1 sq.m

LEGEND

- EXISTING HYDRANT
- EXISTING CATCHBASIN
- EXISTING SANITARY MH
- EXISTING STORM MH
- EXISTING STREET LIGHT
- PAINTED AREA
- NEW CONCRETE





KEY PLAN
N.T.S.

SITE PLAN

2625 Carling Ave.
City of Ottawa

Client:

Site Plan Revision For McDonald's Restaurants of Canada

Property Owner:

Toth Equity Limited

256 Rideau Street
Ottawa, Ontario
K1N 5Y3
Tel: (613) 241-6380 Fax: (613) 241-7812

0 5 10 15 20 25 50 metres
1 : 300

1:300

No.	REVISION	DATE	BY
6	REVISED AS PER CITY COMMENTS	JUNE 01/00	MC
5	REVISED AS PER CLIENT COMMENTS	MAY 10/00	GW
4	REVISED AS PER CITY COMMENTS	MAY 2/00	GW
3	ISSUED FOR CITY REVIEW	APR 11/00	GW
2	ISSUED FOR SITE PLAN APPLICATION: McDONALD'S RESTAURANT	FEB 21/00	MC
1	ISSUED FOR CLIENT REVIEW	FEB 15/00	MC

NOVATECH
CONSULTING ENGINEERS & PLANNERS
Suite 17, 77 Auriga Drive
Nepean, Ontario, Canada
K2E 7Z7
Telephone (613)727-1658
Facsimile (613)727-6972
Email: novainfo@novatech-eng.com

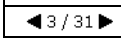
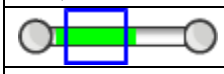
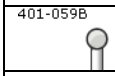
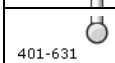
ISSUED
APRIL 2000

PROJECT No.
99183

DRAWING No.
99183-SP

Jun 22, 2000 - 15:59:33 DWG Name: J:\Nova\1999\99183\Sp\99183SP3.dwg Updated By: WLW

Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
	A circled number indicates a structural anomaly. The color of the circle indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
	Indicates that a reverse inspection was carried out, however the camera did not reach the initial inspection hold point. (the hold point of the initial inspection)
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

** CTSpec inc. reserves the right to modify, eliminate or add to the product features described in this pamphlet without notice.

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Appendix I

Oil & Grit Separator (OGS) Information

DM-OS Water Quality Flow Rate Design Report

1480 Richmond Rd, Ottawa, ON

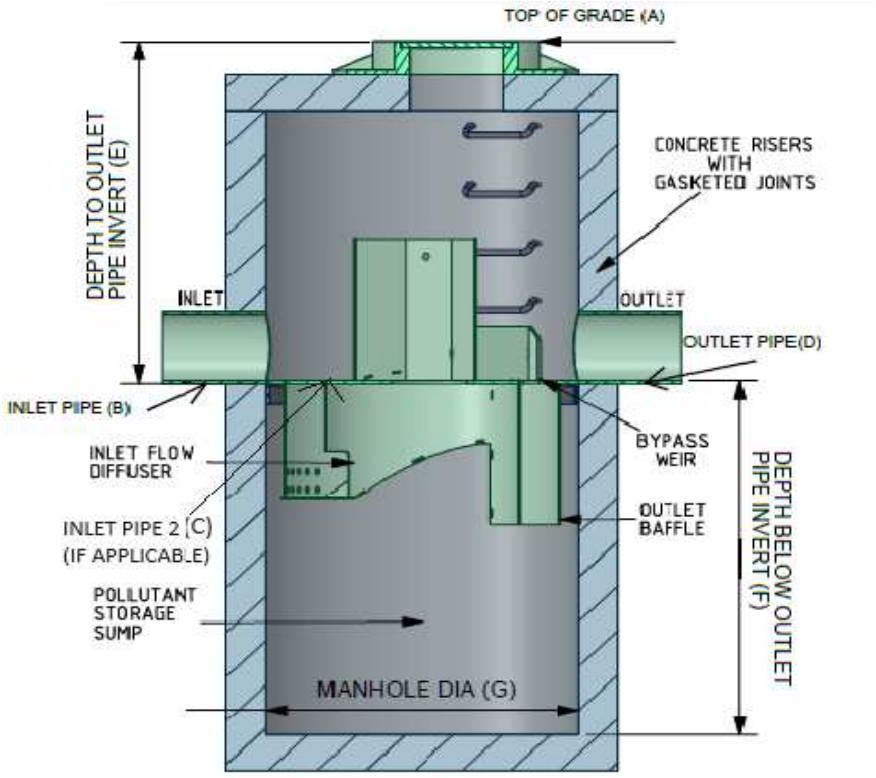
Project Name:	1480 Richmond Rd	**Engineer:**	**Pearson Engineering**
Location:	Ottawa, ON	**Contact:**	Suraj Thakkar
OGS #:	STM MH 1	**Report Date:**	23/Oct/26
Model	RWM DM 1200 OS	**OGS Designer**	**Rob Rainford**
Area	0.07 ha	**Email**	Info@Echelonenvironmental.ca
C value	0.75	**Phone**	905-948-0000

Water Quality Design Parameters

Structure ID	STM MH 1	**DM-OS Unit Volumes**	
TSS Removal Target	80%	**Sediment Capacity (L)**	877
TSS Particle Size	Fine	**Oil Capacity (L)**	270
Peak Storm Flow Rate (L/s)	12 (Per Engineer of Record)	**Total Holding Volume (L)**	2134
Peak Storm Event (Yr)	100 (Per Engineer of Record)	**Estimated Maintence Freq.**	Exceeds 2 Years

DM-OS Site Specific Characteristics*

A (masl)	75.36
B - Diameter (mm)	200
B - Material	PVC
B - Invert Elev. (masl)	73.75
C Diameter (mm)	300
C Material	PVC
C Invert Elev. (masl)	73.68
D Diameter	300
D Material	PVC
D Invert Elev. (masl)	73.62
E (mm)	1740
F (mm)	1524
G (mm)	1219



*For special design considerations, contact Echelon Environmental for a custom design proposal.

**See formal drawing package for all design characteristics

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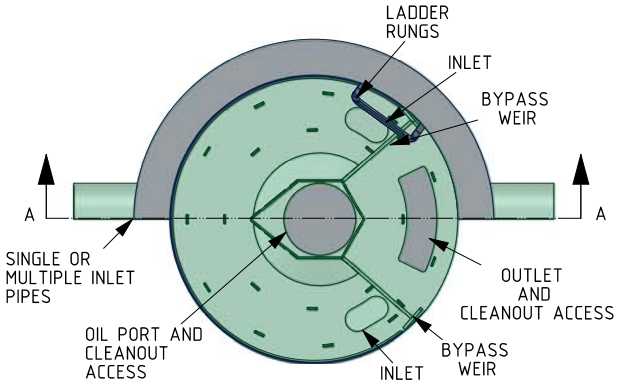
DM-OS Net Annual Load Removal Efficiency Results

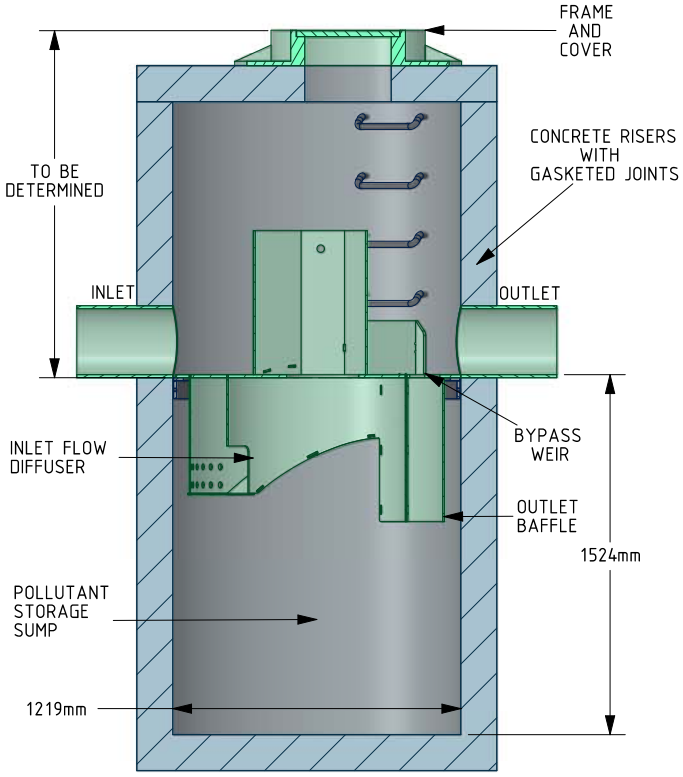
Rainfall Intensity (mm/hr)	Percent Rainfall Volume	Cumulative Rainfall Volume	Total Flow Rate (l/s)
0.5	9.2%	9.2%	0.1
1.0	10.6%	19.8%	0.1
1.5	9.9%	29.7%	0.2
2.0	8.4%	38.1%	0.3
2.5	7.7%	45.8%	0.4
3.0	5.9%	51.7%	0.4
3.5	4.4%	56.1%	0.5
4.0	4.7%	60.7%	0.6
4.5	3.3%	64.0%	0.7
5.0	3.0%	67.1%	0.7
6	5.4%	72.4%	0.9
7	4.4%	76.8%	1.0
8	3.5%	80.3%	1.2
9	2.8%	83.2%	1.3
10	2.2%	85.3%	1.5
15	7.0%	92.3%	2.2
20	4.5%	96.9%	2.9
25	1.4%	98.3%	3.6
30	0.7%	99.0%	4.4
35	0.5%	99.5%	5.1
40	0.5%	100.0%	5.8
45	0.0%	100.0%	6.6
50	0.0%	100.0%	7.3

RWM Diskman Model Selected	RWM DM 1200 OS
Net Annual Removal Efficiency	94.4%
Total Annual Rainfall Treated	100.0%

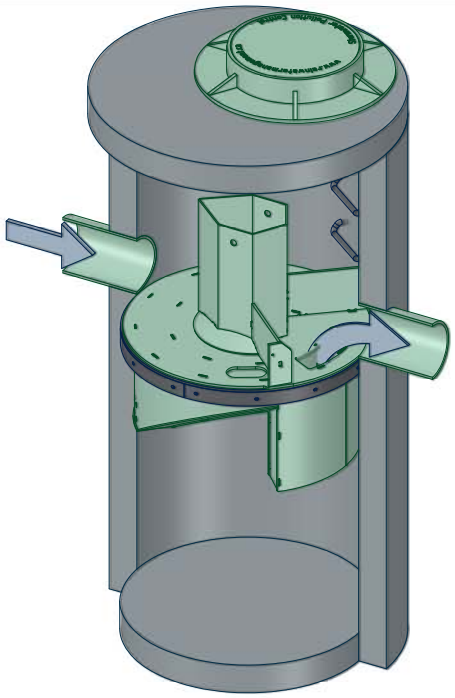
*** Design Notes

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON





SECTION A-A



SCALE 1:36

TYPICAL DRAWING NOT FOR CONSTRUCTION

DESIGN NOTES

1. INLET AND OUTLET PIPE CAN BE UP TO 90 DEGREES APART DEPENDING ON PIPE AND MANHOLE SIZE. IF IN DOUBT, PLEASE CONTACT ECHELON.
2. THE RWM DM-OS UNIT CAN HANDLE MULTIPLE INLET PIPES AS WELL AS A TOP INLET.

GENERAL NOTES

1. ECHELON TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, CONTACT ECHELON. www.echelonenvironmental.ca
4. RWM WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE AND CASTINGS SHALL MEET REQUIRED LOAD RATINGS, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. MANHOLE MANUFACTURED TO LOCAL SPECIFICATIONS.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY THE ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE MANHOLE STRUCTURE (LIFTING DEVICES NOT PROVIDED). HEAVIEST LIFT DEPENDS ON RISER HEIGHTS.
3. CONTRACTOR TO ADD GASKETS OR JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE AS REQUIRED.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES, MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

ECHELON ENVIRONMENTAL
www.echelonenvironmental.ca
905-948-0000

FILE		MODEL			
ECHELON-DM-1200-OS-TYPICAL - REV1		RWM-DM-1200-OS			
JOB / IDENTIFIER		REV	CREATOR	APPROVED	SHEET
DM-OS		01	AG		1 of 1
MATERIAL	THICKNESS	SCALE	CREATED	LAST SAVED	
--		1:32	1/10/2024	1/10/2024 12:09:16 PM	

rainwater MANAGEMENT

RWM-DM[1] AND DM[1]-OS TECHNICAL AND OPERATION MANUAL

Made In:

Canada

Represented in Ontario by:

ECHELON ENVIRONMENTAL

Contact: p: 905-948-1000 I e: info@echelonenvironmental.ca

Website: https://echelonenvironmental.ca/

Overview

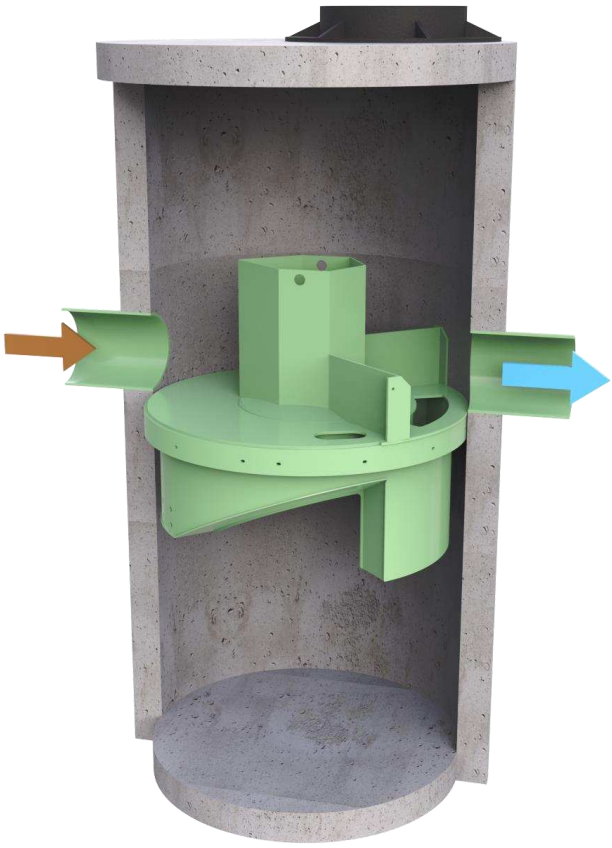
The Rainwater Management RWM-DM[1] Stormwater Treatment System is a hydrodynamic oil/grit separator (OGS) that provides a unique flow path inside the treatment chamber that effectively promotes gravity settling to remove solids from stormwater runoff. The RWM-DM[1] is also very effective in removing and retaining other pollutants such as free oil and other particulate material like nutrients and metals either attached to sediment or heavy enough to settle in the removal process.

The RWM-DM[1] utilizes an internal bypass that directs the treatment flows into the treatment/storage chamber and bypasses the peak events without scouring previously captured pollutants. The RWM-DM[1] can be installed in an inline configuration knowing that the scour prevention technology is second to none.

This RWM-DM[1] is quite versatile in that it can be installed as a bend structure, can accommodate multiple inlets and/or a top inlet (grated lid), and does not require an elevation difference between the inlet and outlet pipes. Rainwater Management is innovative in that we can create custom designs for almost any application that you may have. Contact us with your configuration requirements.

The RWM-DM[1] unit has been fully third-party tested by an ETV-approved laboratory and is listed on the ETV Canada verified technologies list.

How It Works



Water enters the upper inlet chamber of the RWM-DM[1] OGS where it is split by a deflector to minimize turbulence. This maximizes the effective flowpath and efficiently directs the flow to the 2 inlet openings.

It is at the weirs that the water enters the treatment chamber on either side of the center access cylinder directed via chutes designed to enhance the settling of sediment. A vortex is formed at each inlet opening so that any floatabe oil or trash will get drawn down into the treatment chamber where it will float to the underside of the sealed disk. Oil and floatables are stored out of the flow path and will be retained for removal by a vacuum truck.

The design of the system creates a longer flow path and a quiescent zone to maximize settling of pollutants inside the sump. Water then flows up the outlet duct and out the outlet pipe, leaving behind any captured sediment, oil, and trash.

During higher intensity events, the incoming water begins to overflow the internal bypass weirs which allows the unit to continue treating the design flow (which will continue to remove any bedload of heavier pollutants that flow in the bottom of the pipe) while bypassing the additional flows. As the scour testing results show, there is virtually no scour of previously trapped pollutants ensuring retention of previously capture pollutants.

RWM-DM[1] and DM[1]-OS Details

RWM Model	Inside Diameter (mm)	Sump Depth Below Outlet Invert (mm)	Minimum Rim-Invert Distance[1] (mm)	Total Liquid Volume[2] (litres)	ETV Sediment Depth[3] (mm)	Oil Storage Capacity[4] (litres)
DM[1]-900/ DM[1]-900-OS	914	1118	600	867	550	140
DM[1]-1050/ DM[1]-1050-OS	1066	1270	600	1270	610	220
DM[1]-1200/ DM[1]-1200-OS	1219	1520	610	2134	750	270
DM[1]-1500/ DM[1]-1500-OS	1524	1829	750	3738	900	560
DM[1]-1800/ DM[1]-1800-OS	1829	2108	850	5828	1000	950
DM[1]-2100/ DM[1]-2100-OS	2134	2540	950	8755	1200	1570
DM[1]-2400/ DM[1]-2400-OS	2438	2794	1050	12275	1300	2293
DM[1]-3050/ DM[1]-3050-OS	3048	3505	1200	24212	1700	4520
DM[1]-3660/ DM[1]-3660-OS	3658	4013	1350	39277	1900	7800

1. This distance is dependent upon many factors. Contact Echelon Environmental with your project details so we can provide a minimum distance based on your specific project.
2. This volume is the total volume below invert. This can be increased if needed.
3. This capacity is based on ETV approved testing.
4. This capacity is from the bottom of the outlet baffle to the underside of the bypass chamber. This can be increased if needed. Dry weather spill volume.
5. Contact Echelon Environmental if you would like a design report and/or to utilize a coarser particle size or alternative testing criteria. Either of these cases could result in a downsized unit to meet local requirements.

RWM-DM[1] and DM[1]-OS Design

The RWM-DM[1] and RWM-DM[1]-OS are sized depending on the Federal, Provincial, or Municipal requirements. The ETV particle size removal is derived from Verified third-party lab testing based om the Canadian Environmental Technology Verification Programs Procedure for Laboratory Testing of Oil-Grit Separators utilizing the following specific site parameters:

- Drainage area
- Local rainfall data
- Site imperviousness
- Scour protection for high flows
- Onsite flow control for runoff
- Oil spill requirements
- Sediment storage capacity
- ETV particle size distribution Capture
- Third party testing at ETV approved laboratory
- ETV verification (pending)

Many areas within Canada have different requirements for sizing OGS units and interpretations of how they want details applied. Contact Rainwater Management for design assistance or visit our website.

Application

The RWM-DM[1] and DM[1]-OS units are suited to any commercial, residential, or industrial application where pollution removal and retention is required. The units are normally deployed in concrete manhole below ground but they can be configured for above ground use in Stainless Steel, Fiberglass or HDPE tanks. The RWM-DM[1] testing shows that the capture pollutants will be removed and stored in the manhole without allowing any to be released during peak events. Scour testing showed virtually 100% retention of captured pollutants over all flows. For sites where oil spill capture and greater than 99% retention is needed the RWM-DM[1]-OS unit should be utilized. The RWM-DM[1] also captures oil but the RWM-DM[1]-OS has been specifically designed for oil spill capture and retention even during peak events.

Canadian ETV - ISO 14034 Information

Particle Size Distribution

The ISO 14034 (Canadian ETV) Particle Size Distribution that is utilized for testing all OGS units is shown below. This is the particle size distribution utilized in whole or in part for this sizing.

Particle Size (µm)	Percent Less Than	Particle Size Fraction (µm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

Scour Testing

RWM-DM[1] and RWM-DM[1]-OS units have an internal bypass that directs the treatment flows into the treatment/storage chamber and bypasses the peak events without scouring previously capture pollutants. This has been third-party verified during the Canadian ETV testing. The RWM-DM[1] OGS units can be installed in an inline configuration knowing that the scour prevention technology is second to none.

Oil Retention

The RWM DM[1]-OS unit effectively achieved almost 100 % oil retention for all flows during the third-party testing of the Light Liquid Retention Simulation Test Protocol.

Installation

The RWM-DM[1] internals will arrive onsite pre-installed in the manhole. Ensure that you have the shop drawings for your specific project to ensure proper installation orientation and depth. The design allows for the inlet and outlet inverts to be the same elevation but there are variances allowed that must be confirmed during the design phase. The installation of the manhole must follow the recommendations of the specifying engineer as well as all local, provincial and federal requirements in terms of supporting soil, backfill and anti-floatation requirements. The inlet/outlet pipe installation into the manholes must also follow the recommendations of the specifying engineer as well as the local requirements. The required opening types (gasketed, pipe stub, rough opening, cored opening) will be provided by Echelon Environmental as specified during the order process. All local, provincial and federal safety procedures for manhole installation must be followed.

Inspection

The most important part of the inspection and maintenance is that all local, Provincial, Federal and OSHA health and safety requirements are followed. Under no circumstance should there be entry into the units without the proper procedures in place.

Inspection of the RWM-DM[1] units is conducted from the surface and does not require entry into the manhole. We provide easy access for the vacuum hose through the outlet opening in the bypass disk to check for sediment depth. Oil storage can be checked through the center opening. Visual inspection of the internal components is also necessary to ensure nothing is damaged or blocked.

Maintenance

Maintenance is completed with a vacuum truck from the surface and also does not require entry into the manhole. The sediment in the lower treatment chamber can be removed with a vacuum truck through either the outlet opening or through the center access. If there is oil present, the typical procedure is to remove the oil from the water surface through the center access opening and dispose of it according to local regulations.

ETV Depth of Sediment for Maintenance	
Model	Depth (mm)
DM[1]-900/ DM[1]-900-OS	550
DM[1]-1050/ DM[1]-1050-OS	600
DM[1]-1200/ DM[1]-1200-OS	750
DM[1]-1500/ DM[1]-1500-OS	900
DM[1]-1800/ DM[1]-1800-OS	1000
DM[1]-2100/ DM[1]-2100-OS	1200
DM[1]-2400/ DM[1]-2400-OS	1300
DM[1]-3000/ DM[1]-3000-OS	1700
DM[1]-3600/ DM[1]-3600-OS	1900

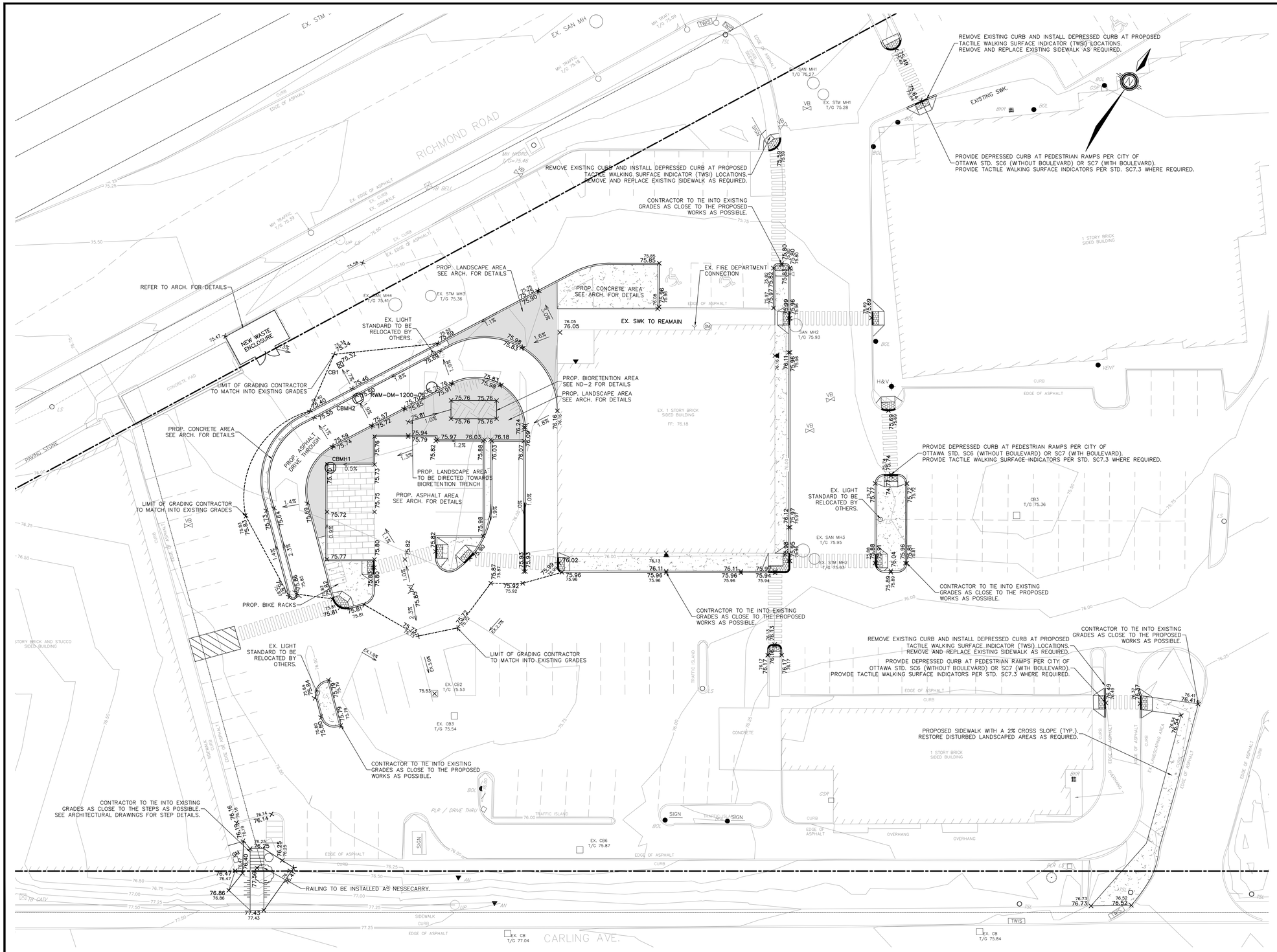
Note that maintenance frequency is dependent on the site conditions. For example, units installed before construction is completed will require more frequent cleanout than post-construction. It is recommended that the unit is inspected every six months post-install while observing the site conditions and changes to site conditions to determine the proper maintenance frequency. The cost of maintenance, cleanout, and disposal is also dependent on the location and requirements.

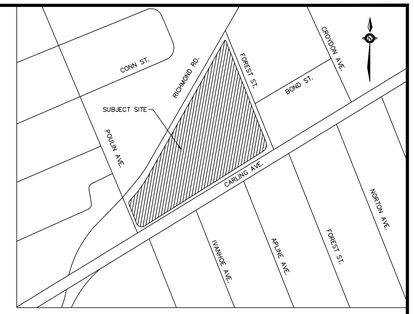
The RWM-DM[1]-OS system is recommended for areas where the possibility of a hydrocarbon spill may occur. Please also refer to the Echelon Environmental Coalescing Plate Oil Water separators where 15 mg/l or lower oil effluent discharge is required. It is recommended that if hydrocarbons are present during inspection that they are removed immediately. The RWM-DM[1]-OS system in the ETV light liquid test shows greater than 99% retention but it is still recommended to remove any captured oil immediately. Contact Echelon Environmental if you want to add oil sensing alarms.

Disposal of all captured pollutants needs to conform to all local, provincial and federal disposal guidelines. For any modifications to the existing design where additional pollutant capacity or any other modification is desired contact RWM with your requirements.

Appendix J

Pearson Engineering Drawings





LEGEND

- CB — PROPOSED CATCH BASIN
- CB — EXISTING CATCH BASIN
- STM DCB — PROPOSED DOUBLE CATCH BASIN
- MH — PROPOSED STORM MANHOLE
- STM MH — EXISTING STORM MANHOLE
- SAN MH — PROPOSED SANITARY MANHOLE
- SAN MH — EXISTING SANITARY MANHOLE
- HYD. — PROPOSED FIRE HYDRANT
- EX. H&V — EXISTING FIRE HYDRANT
- VB — PROP. WATER VALVE
- VB — EX. WATER VALVE
- × 254.63 — PROPOSED ELEVATION
- 254.09 — EXISTING ELEVATION
- 1.5% — PROPOSED DIRECTION AND GRADE
- PROP. BACK OF CURB
- PROP. EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- TACTILE WALKING SURFACE INDICTOR SEE ARCHITECTURE FOR DETAILS

NO.	REVISION NOTE	DATE	BY
1.	REVISED AS PER 1st SUBMISSION COMMENTS	11/23/26	JM

BENCHMARK

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN 76° 30' WEST LONGITUDE MTM ZONE 9. NAD83 (ORIGINAL)

19773035 N: 5006060.42 E: 324888.04
19680191 N: 5033564.26 E: 388064.94

VERTICAL DATUM NOTE
ELEVATIONS ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928:1978) AND ARE DERIVED FROM THE CAN-NET VRS NETWORK - OTWA BASE STATION

LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

SITE GRADING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	MWD	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	SG-1		
REVISION #	1		

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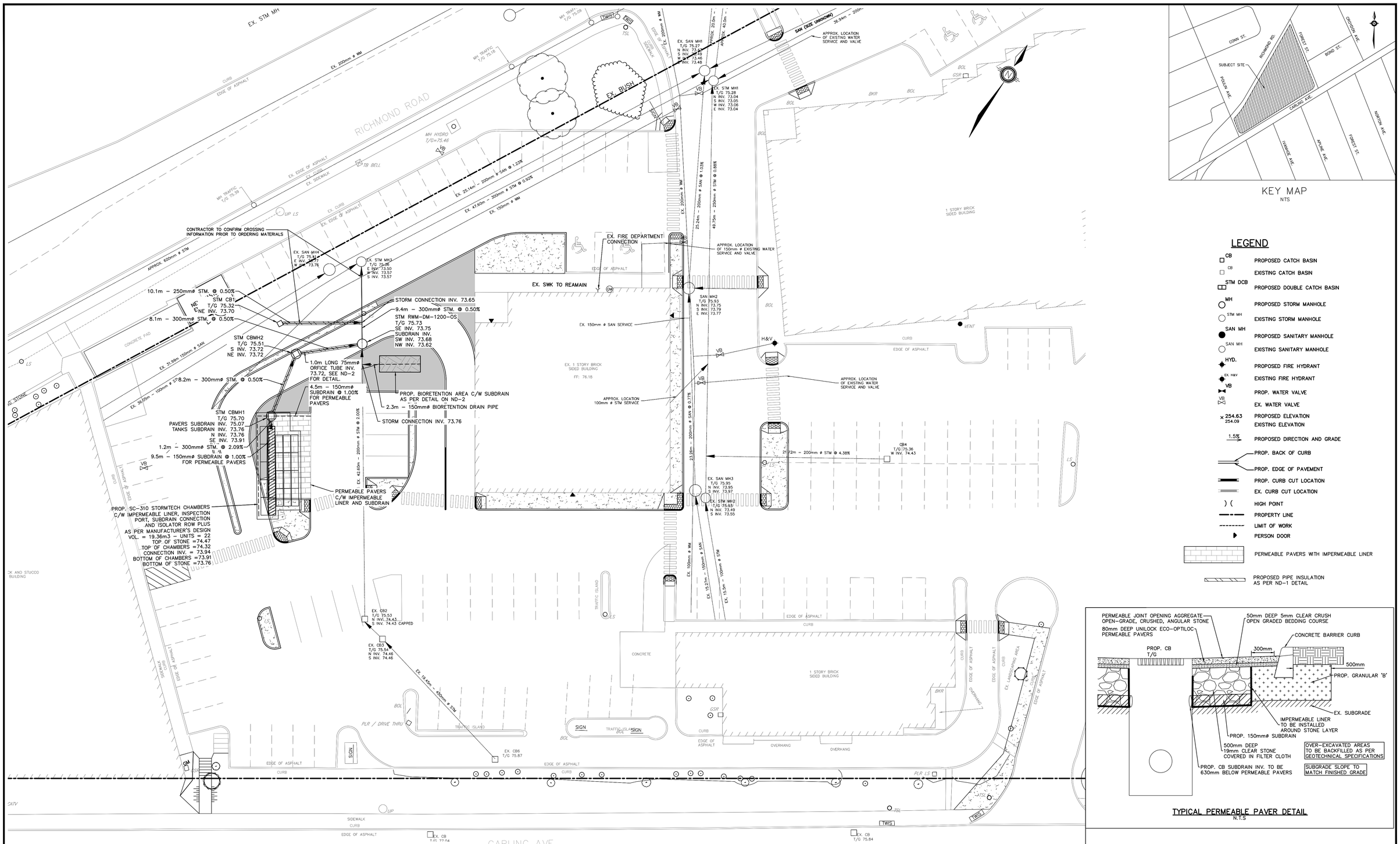

KEY MAP
NTS

LEGEND

- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- PROPOSED DOUBLE CATCH BASIN
- PROPOSED STORM MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROP. WATER VALVE
- EX. WATER VALVE
- PROPOSED ELEVATION
- EXISTING ELEVATION
- PROPOSED DIRECTION AND GRADE
- PROP. BACK OF CURB
- PROP. EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
- HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- PROPOSED PIPE INSULATION AS PER ND-1 DETAIL

TYPICAL PERMEABLE PAVER DETAIL
N.T.S

NO.	REVISION NOTE	DATE	BY
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BENCHMARK

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19680191 N:5033564.26 E:388064.94

VERTICAL DATUM NOTE
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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

SITE SERVICING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	MWD	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	SS-1		
REVISION #	1		

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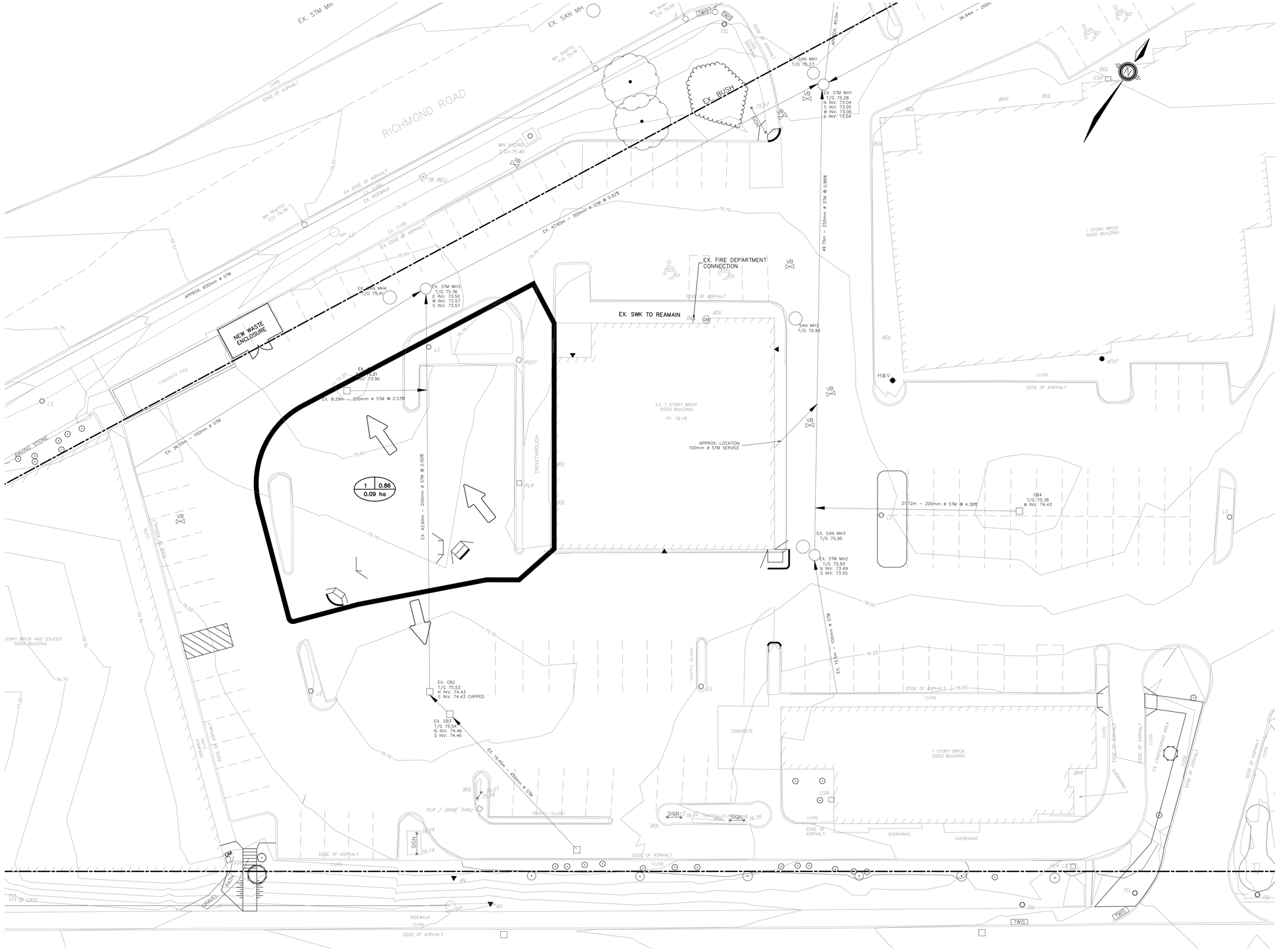

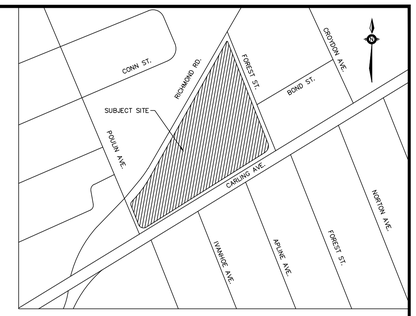

KEY MAP
NTS

LEGEND

- RETAINING WALL (BY OTHERS)
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA 1 | 0.75 | 1.00 ha — RUNOFF COEFFICIENT
- AREA IN HECTARES

NO.	REVISION NOTE	DATE	BY
1.	REVISED AS PER 1st SUBMISSION COMMENTS	11/23/26	JM

BENCHMARK

BEARING NOTE
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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

PRE–DEVELOPMENT
STORM CATCHMENT PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	MWD	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	STM–1		
REVISION #	1		

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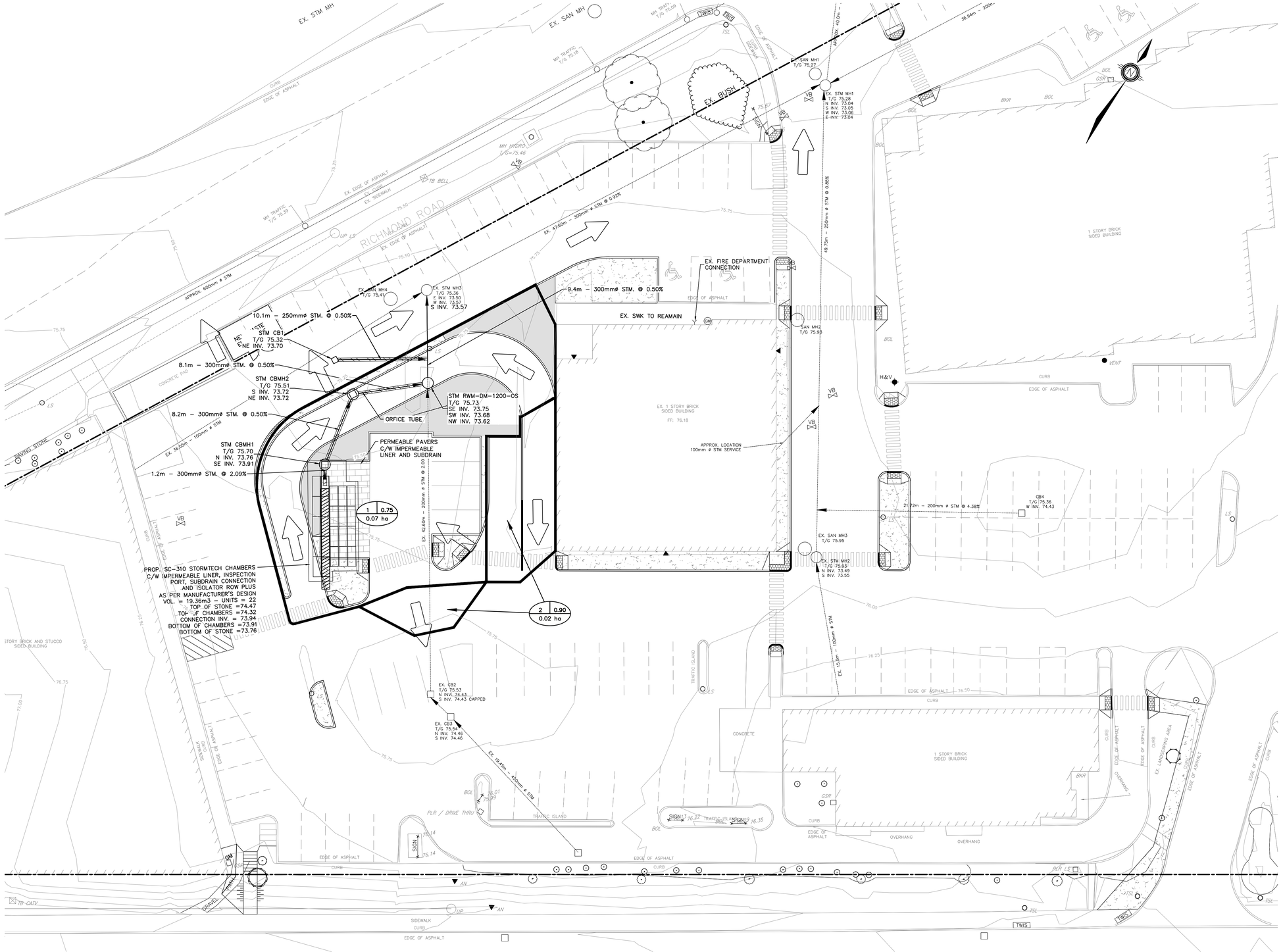

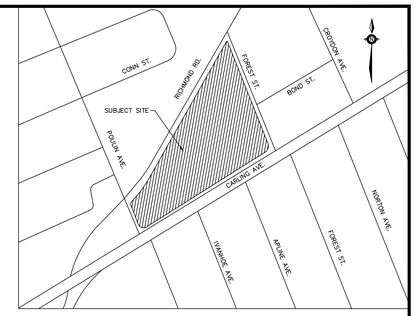

KEY MAP
NTS

LEGEND

- RETAINING WALL (BY OTHERS)
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA: 1 | 0.75 | 1.00 ha — RUNOFF COEFFICIENT / AREA IN HECTARES
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- PROPOSED PIPE INSULATION AS PER ND-1 DETAIL

NO.	REVISION NOTE	DATE	BY
1.	REVISED AS PER 1st SUBMISSION COMMENTS	11/23/26	JM

BENCHMARK

BEARING NOTE
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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

POST-DEVELOPMENT
STORM CATCHMENT PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

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DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	STM-2		
REVISION #	1		

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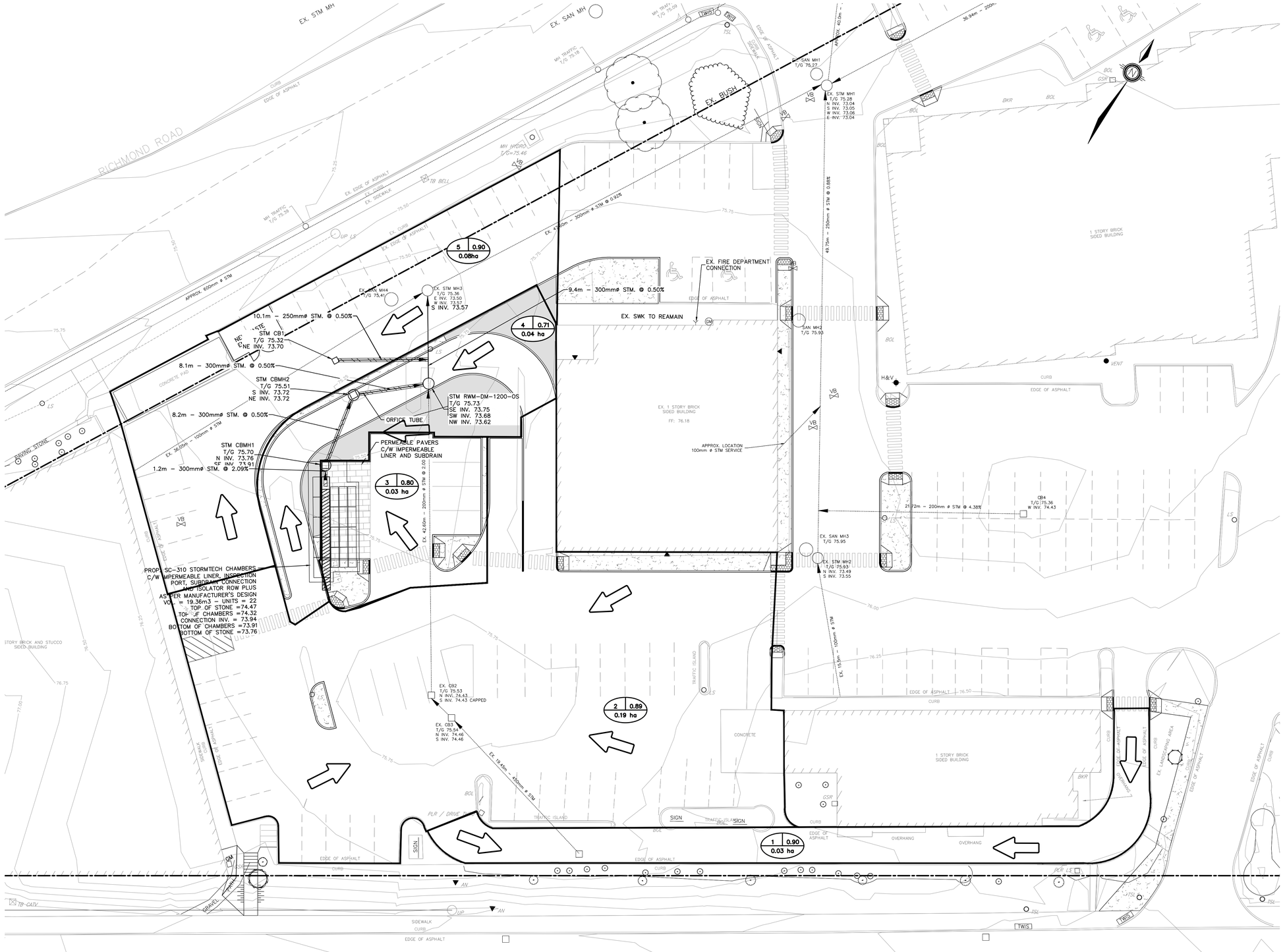

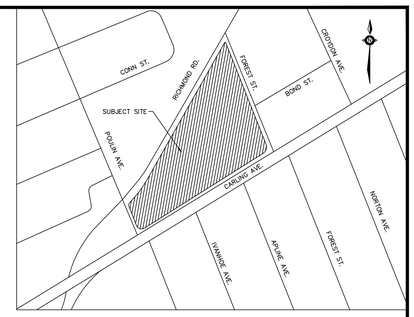

KEY MAP
NTS

LEGEND

- RETAINING WALL (BY OTHERS)
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA: 1 | 0.75 | 1.00 ha — RUNOFF COEFFICIENT; AREA IN HECTARES
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- PROPOSED PIPE INSULATION AS PER ND-1 DETAIL

NO.	REVISION NOTE	DATE	BY
1.	REVISED AS PER 1st SUBMISSION COMMENTS	11/23/26	JM

BENCHMARK

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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

POST-DEVELOPMENT DRAINAGE PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	MWD	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	STM-3		
REVISION #	1		

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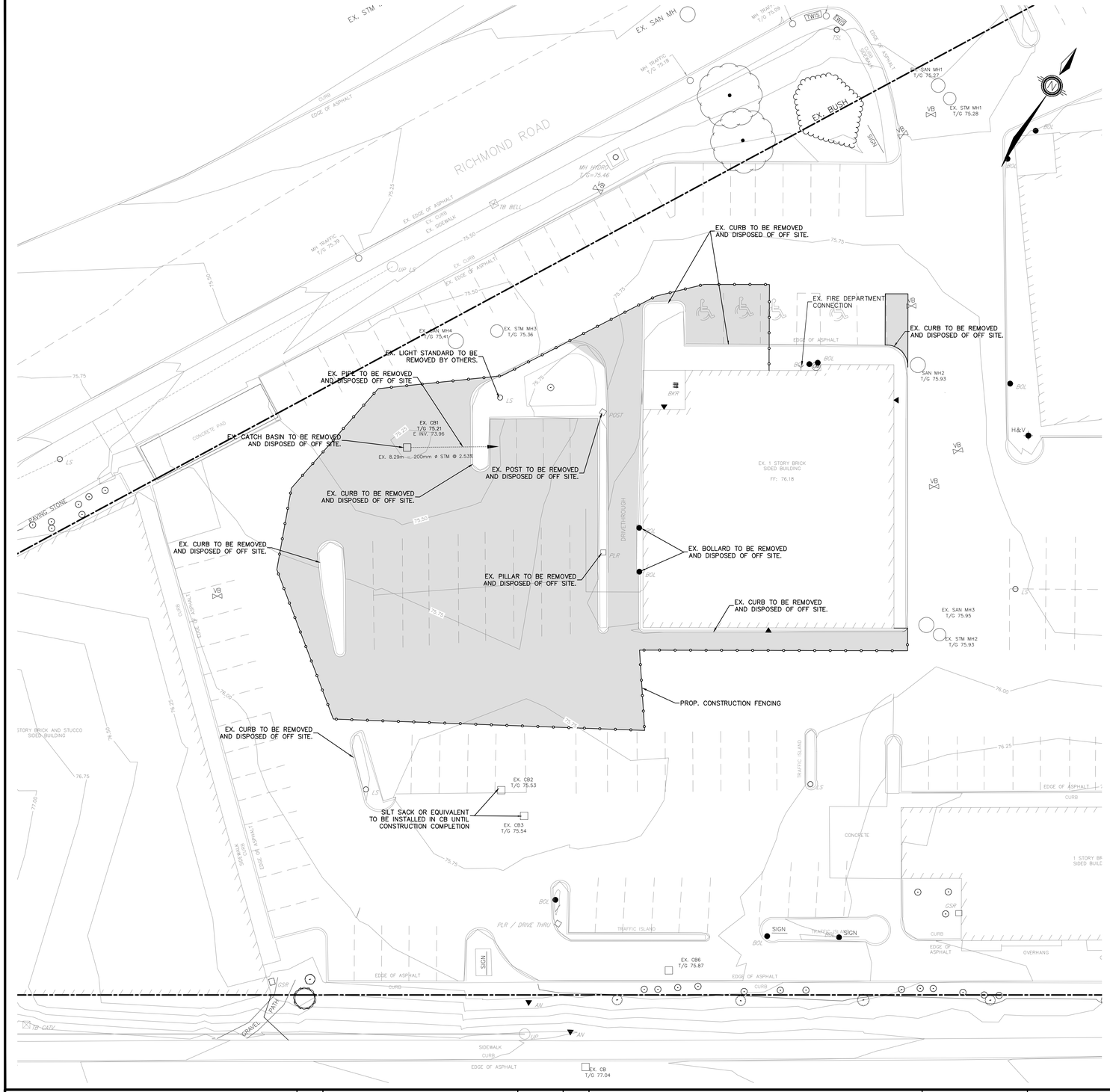
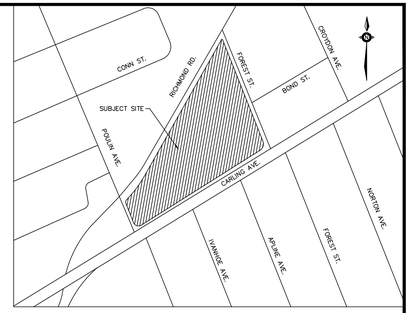


SEQUENCE OF CONSTRUCTION

1. ENGINEER TO BE NOTIFIED PRIOR TO INITIATION OF ANY ON SITE WORKS.
2. SILT FENCE AS PER OPSD 219.110
3. VEGETATION REMOVAL MAY COMMENCE AFTER ALL SILT FENCE IS INSTALLED AND APPROVED BY THE ENGINEER.
4. COMMENCE WITH EARTH WORKS AND SITE SERVICING.
5. INSTALLATION OF PROPOSED INFILTRATION FACILITIES TO THE TIME OF LANDSCAPING WORKS.
6. EROSION CONTROL MEASURES TO BE MAINTAINED AS DIRECTED BY THE ENGINEER DURING THE CONSTRUCTION PERIOD. ADDITIONAL CONTROL MEASURES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
7. ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH SEED, SOD, MULCH OR OTHER ADEQUATE COVERING, AS INSTRUCTED BY THE ENGINEER.

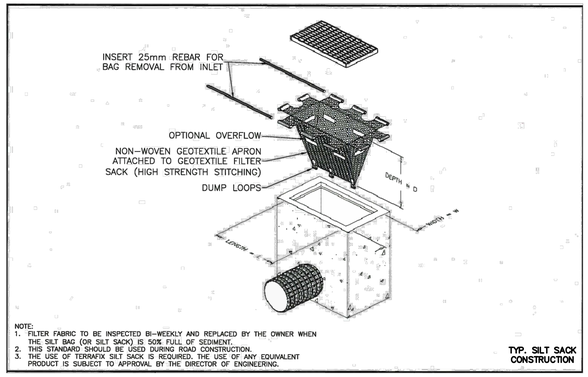
NOTES FOR SEDIMENT & EROSION CONTROL

1. DISTURBED AREAS THAT HAVE FAILED TO HAVE STABLE GROUND COVER ESTABLISHED BY OCTOBER 30TH SHALL BE PROTECTED WITH A SILTATION CONTROL FENCE OR STRAW MULCH ETC. AND MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION BECOMES ESTABLISHED IN THE SUBSEQUENT GROWING SEASON.
2. ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30m FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE ADMINISTRATOR.
3. SILT FENCE SHALL BE PUT IN PLACE PRIOR TO AND MAINTAINED DURING ALL GRADING. SILT FENCE TO BE INSPECTED PRIOR TO COMMENCEMENT OF EARTH GRADING ACTIVITIES. SILT FENCE TO BE INSPECTED AND REPAIRED OR REPLACED IF DAMAGED AS DIRECTED BY THE SITE ADMINISTRATOR.SILT CONTROLS TO BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN EVENT. INSTALLATION SHALL BE TO THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK, AND AFTER EVERY RAINFALL EVENT.
6. CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSS 577, CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS WELL AS ALL APPLICABLE MUNICIPAL STANDARDS.
7. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES SHOULD BE PRESENTED IN WRITING FOR APPROVAL OF THE SITE ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE MUNICIPALITY AND CONSERVATION AUTHORITY.
8. THE TOPS OF ALL FILTER FABRIC MUST BE A MINIMUM OF 1.0 METRES ABOVE THE GROUND LEVEL AND ATTACHED TO THE FENCE WITH A CONTINUOUS STEEL WIRE. ALTERNATIVELY, THE FILTER FABRIC MUST BE FOLDED OVER THE TOP OF THE FENCE AND ATTACHED TO THE FENCE WITH WIRE LOOPED THROUGH THE FABRIC ON BOTH SIDES OF THE FENCE. FILTER FABRIC IS TO BE TERRAFIX 270R OR EQUIVALENT.
9. ALL DISTURBED GROUND LEFT FOR MORE THAN 30 DAYS SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, OR COVERING OR OTHER EQUIVALENT CONTROL MEASURES. THIS PERIOD OF INACTIVITY SHALL BE AT THE DISCRETION OF THE CITY OF OTTAWA BUT SHALL NOT EXCEED THIRTY DAYS OR SUCH LONGER PERIOD DEEMED ADVISABLE BY THE CITY OF OTTAWA'S PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT.
10. CONTRACTOR RESPONSIBLE FOR MUD TRACKING, PREVENTION, AND MAINTENANCE ON RICHMOND RD.
11. ROADS AND PARKING LOT AROUND SITE TO BE LEFT IN A BROOM SWEPT CONDITION AT THE END OF EACH WORK DAY.
12. SILT SACKS TO BE CLEANED OUT AD REQUIRED.
13. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALITIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.



LEGEND

- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- PROPOSED DOUBLE CATCH BASIN
- PROPOSED STORM MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROP. WATER VALVE
- PROPERTY LINE
- OVERLAND FLOW DIRECTION
- LIMITS OF ASPHALT REMOVAL
- CONSTRUCTION FENCING



NOTE:
1. FILTER FABRIC TO BE INSPECTED BI-WEEKLY AND REPLACED BY THE OWNER WHEN THE SILT BAG (OR SILT SACK) IS 50% FULL OF SEDIMENT.
2. THIS STANDARD SHOULD BE USED DURING ROAD CONSTRUCTION.
3. THE USE OF TERRAFIX SILT SACK IS REQUIRED. THE USE OF ANY EQUIVALENT PRODUCT IS SUBJECT TO APPROVAL BY THE DIRECTOR OF ENGINEERING.

TYP. SILT SACK CONSTRUCTION

NO.	REVISION NOTE	DATE	BY
1.	REVISED AS PER 1st SUBMISSION COMMENTS	11/23/26	JM

BENCHMARK

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN 76° 30' WEST LONGITUDE MTM ZONE 9. NAD83 (ORIGINAL)

19773035 N: 5006060.42 E: 324888.04
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VERTICAL DATUM NOTE
ELEVATIONS ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928:1978) AND ARE DERIVED FROM THE CAN-NET VRS NETWORK – OTWA BASE STATION

LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Nov. 23, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

EROSION AND SEDIMENT CONTROL PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

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DRAWN BY	JM	VERT SCALE	VERT
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