

# 750 St. David Street North

# Functional Servicing and Stormwater Management Report

**Project Location:** 750 St. David Street North, Fergus, ON

Prepared for: 2587722 Ontario Inc. 750 St. David Street North Fergus, ON N1M 2K9

Prepared by: MTE Consultants Inc. 520 Bingemans Centre Drive Kitchener, ON N2B 3X9

May 29, 2024

MTE File No.: 54925-100

Engineers, Scientists, Surveyors.



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Notes and Details Plan MTE Drawing No. C2.3	Appended

# **1.0 INTRODUCTION**

MTE Consultants Inc. was retained by 2587722 Ontario Inc. to complete a Functional Servicing and Stormwater Management (FSSWM) Report in support of the Zoning By-Law Amendment application for the proposed residential development to be constructed at 750 St. David Street North / Highway 6 (herein referred to as 'the Site') in the Township of Centre Wellington.

The purpose of this study is to support the Zoning By-Law Amendment application. This will be accomplished by reviewing the opportunities and constraints for the subject property with respect to servicing, grading, and stormwater management; reviewing the requirements of the reviewing agencies; describing the development concept; and demonstrating the functional serviceability of the property. Pending approval of the applications, detailed design of the Site will commence and be submitted to the Township of Centre Wellington and other governing agencies in support of the applications and Site Plan Approval.

## **1.1 Site Description**

The Site encompasses an area of 0.148ha, and currently comprises a single detached dwelling, a detached garage, and a gravel driveway off St. David Street North / Highway 6. The property is bounded to the north by St. Joseph's Church, to the east by an existing residential dwelling, to the south by Parkside Drive East, and to the west by St. David Street North / Highway 6. For the exact location of the Site refer to Figure 1.0.

## **1.2 Proposed Development**

The proposed development for the Site is a three-storey stacked townhouse building comprising 12 units, complete with a parking lot and driveway entrance off Parkside Drive East.

The current zoning of the Site is Residential R1c Zone. A Zoning By-Law Amendment will be required to re-zone the Site to Residential R4 Zone to permit the proposed development.



# 2.0 EXISTING CONDITIONS

## 2.1 Topography

Existing topographic information for the Site was obtained from a detailed survey completed by MTE in May 2024. The Site's frontage along St. David Street North / Highway 6 has an approximate slope of 1.0% from north to south. There is an existing ditch along the east side of the road along the Site's frontage, with an approximate slope of 2% from north to south. The road elevation of St. David Street North / Highway 6 is approximately 0.5m above the property line elevation along the Site's frontage. Parkside Drive East has an approximate slope of 1.0% from west to east in front of the Site. The Site is currently sloped away from the existing building towards the ditch along St David Street North / Highway 6 and the Parkside Drive East right-of-way.

## 2.2 Existing Servicing

Existing servicing information within the surrounding right-of-way was obtained from the topographic survey, and plan and profile information provided by the Township of Centre Wellington.

#### 2.2.1 Water

There is currently an existing 300mm diameter municipal watermain on the far (west) side of St. David Street North / Highway 6, and an existing 150mm diameter municipal watermain on the close (north) side of Parkside Drive East fronting the Site. The closest municipal fire hydrant is located on the southwest corner of the intersection of Parkside Drive East and St. David Street North / Highway 6. This existing hydrant is located within 90.0m of the proposed building and will be utilized for fire protection for the development.

The location of the existing water service to the dwelling on Site was not located as part of the survey. The existing service is to be removed and capped at the municipal watermain as part of the re-development of the Site.

#### 2.2.2 Sanitary

There is an existing 200mm diameter municipal sanitary sewer along the centreline of Parkside Drive East which drains east. The sanitary sewer ends at a maintenance hole approximately 11.9m east of the eastern boundary of the Site's property line and will require extension to service the Site. The depth of the 200mm diameter municipal sanitary sewer at the manhole is approximately 2.9m. There is no municipal sanitary sewer on St. David Street North fronting the Site.

The existing dwelling is currently serviced by a private on-site septic system. The septic system is to be removed in accordance with all applicable regulations as part of the re-development of the Site.

#### 2.2.3 Storm

There is an existing 150mm diameter municipal storm sewer below the existing driveway entrance, draining south in the ditch along the Site's frontage with St. David Street North / Highway 6. This storm sewer ultimately drains to a catch basin/manhole that directs stormwater toward an existing 300mm diameter municipal storm sewer located on the east side of St. David Street North / Highway 6 draining south. This catchbasin/manhole is located at the southwest

corner of the Site and is approximately 1.8m deep. There is no municipal storm sewer on Parkside Drive East fronting the Site.

## 2.3 Existing Soils Information

A Geotechnical Investigation was completed for the Site by MTE in April 2024. Four boreholes were advanced to depths between 4.7m and 6.5m below grade. The investigation revealed the subsurface soil conditions as being generally composed of surficial topsoil underlain by native deposits of sandy silt and glacial till.

Monitoring wells were installed in three of the boreholes to facilitate monitoring and measurement of groundwater elevations. Groundwater elevations measured in April 2024 were found to be between 0.6m-1.3m below grade, at elevations between 419.8 to 421.4 metres above sea level (masl).

## 3.0 PROPOSED GRADING AND SERVICING STRATEGY

Preliminary grading and servicing strategies have been developed based on the topographic survey provided by MTE Ontario Land Surveyors, plan and profile information provided by the Township of Centre Wellington, and the Concept Site Plan provided by Fryett Turner Architects, dated April 24, 2024. Refer to the enclosed MTE Drawings C2.1 and C2.2 for details. The grading and servicing strategies will be further refined during detailed design at the Site Plan Approval stage.

## 3.1 Proposed Grading

The proposed development comprises 12 townhouse units in one stacked building, complete with an on-site parking lot and driveway entrance from Parkside Drive East. The proposed grading strategy will respect the existing grades along St. David Street North / Highway 6, Parkside Drive East and all other property boundaries. The majority of the grading internal to the Site will involve directing stormwater runoff to the private on-site storm sewer system. Stormwater runoff will be conveyed to the existing municipal sewer via an on-site storm sewer and via overland flow into the existing ditch between the Site and St. David Street North / Highway 6. Refer to MTE Drawing C2.1 for an illustration of the functional grading design.

## 3.2 Proposed Servicing

The following sections provide details regarding the preliminary proposed water, sanitary and storm servicing for the proposed development. Refer to MTE Drawing C2.2 for an illustration of the functional servicing design.

#### 3.2.1 Water

A new 150mm diameter water service will be installed at the southeast corner of the proposed building and will connect to the existing 150mm diameter municipal watermain along Parkside Drive East. The water service will be distributed internally to each unit.

#### Water Demand

Various guidelines and references exist for calculating the required water supply for firefighting purposes. In Ontario, there are two standards/guidelines that are most often referenced:

- Ontario Building Code (OBC) provincial codes and guidelines published by the Ministry of Municipal Affairs and Housing for the Province of Ontario; and
- The Fire Underwriters Survey (FUS) an insurance industry guideline.

Many municipalities in Ontario use both the OBC and the FUS fire flow requirements for assessing firefighting water supply requirements. Ideally, fire flow demands for new developments are calculated based on the FUS criteria; however, it is not always reasonable to expect that the local existing municipal infrastructure has the operational capacity to supply water at the rates prescribed in the FUS guidelines. As a result, at no time shall the available fire flow be less than that required by the Ontario Building Code. The building is proposed to be of wood frame construction (combustible construction). The OBC and FUS requirements were calculated for the proposed building and are shown in Table 3.1. Refer to Appendix A for detailed calculations.

Building	OBC (L/min)	FUS (L/min)
Proposed Building*	6,300	10,000

#### Table 3.1 – Required Fire Flow

\* A detailed analysis will need to be completed once the final building design has been completed

The minimum water supply flow rate for the proposed development is 105L/s (6,300L/min) based on the calculation method specified by the OBC. Based on a maximum day domestic demand of 0.10L/s and the fire flow demand of 105.0L/s, the total water demand for the Site is expected to be 105.1L/s.

As mentioned previously, the existing municipal hydrant located at the southwest corner of the intersection of Parkside Drive East and St. David Street North / Highway 6 will be utilized for fire protection of the proposed building. A detailed fire flow analysis will be completed at the detailed design stage to ensure that adequate flow and pressure will be available at the existing hydrant.

### 3.2.2 Sanitary

A sanitary flow design sheet has been prepared to determine the flows anticipated to be generated by the proposed development. With the 12 townhouse units proposed and a Site area of 0.148ha, the resulting peak flow sanitary rate from the Site is expected to be 0.54L/s. Refer to Appendix A for the Sanitary Flow Design Sheet.

The existing 200mm diameter municipal sanitary sewer on Parkside Drive East will need to be extended approximately 15.0m west to service the Site. A new 200mm diameter private sanitary service is proposed to be connected to the extended municipal sanitary sewer at the southeast corner of the Site.

The proposed 200mm diameter sanitary service is proposed at a minimum design slope of 1.1%, corresponding to a full flow pipe capacity of 34.38L/s. Therefore, the proposed 200mm diameter sanitary service has sufficient capacity for this development.

#### 3.2.3 Storm

A storm sewer design sheet has been prepared to determine the flows anticipated to be generated by the proposed development. A MIDUSS model was prepared to model the 5- and 100-year post-development flow from the Site complete with on-site controls. Refer to Section 4.0 for further details. The 5-year post-development controlled flow rate from the Site is 6.0L/s (0.006m<sup>3</sup>/s). Refer to Appendix A for the Storm Sewer Design Sheet.

A private storm sewer system is proposed on-site to collect stormwater from the landscaped amenity area and the parking lot. The storm sewer system, which will include several catchbasin manholes, manholes, and a catchbasin, will convey runoff from the Site to the existing municipal

storm sewer running along the east side of St. David Street North / Highway 6. A 300mm diameter private storm sewer is proposed on-site, at a minimum slope of 0.5% with a full flow pipe capacity of 68.38L/s. A storm sewer design sheet for the proposed sewer is included in Appendix A. The major overland flow route for the Site will be towards the Parkside Drive East right-of-way.

# 4.0 PRELIMINARY STORM WATER MANAGEMENT DESIGN

## 4.1 SWM Criteria

In the existing condition, stormwater runoff from the Site is directed to the existing ditch along St. David Street North / Highway 6 and the Parkside Drive East right-of-way.

The stormwater management design criteria for the Site, as established by the Township of Centre Wellington, are as follows:

- i) Attenuation of the post-development peak flows for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events to the pre-development (existing) peak flows;
- ii) Implementation of Enhanced (Level 1) water quality controls; and,
- iii) Implementation of Erosion and Sediment Control Measures.

## 4.2 Water Quantity Control

In order to successfully complete the preliminary stormwater management design for the Site, the following specific tasks were undertaken:

- i) Calculate the allowable runoff rates using MIDUSS NET;
- ii) Determine the percent impervious of the Site and catchment parameters for inclusion in MIDUSS NET modelling; and,
- iii) Calculate post-development runoff hydrographs using MIDUSS NET.

The following table summarizes the catchments used in modelling the Site. The predevelopment scenario was modeled as one catchment area, comprising the whole Site. The post-development scenario was separated into three catchment areas: the proposed building rooftop, the controlled area, and the uncontrolled area. Figure 2.0 illustrates the limits of the predevelopment catchment area. Figure 3.0 illustrates the limits of the post-development catchment areas.

#	Catchment	Area (ha)	% Impervious	Pervious CN	Impervious CN	Slope (%)	Flow Length (m)
Pre-D	Development Catchment	Areas					
101	Whole Site	0.148	26%	75	98	1.4	5
Post	-Development Catchment	Areas					
201	Rooftop	0.032	100%	75	98	10.0	15
202	Controlled Area	0.080	62%	75	98	3.0	12
203	Uncontrolled Area	0.036	17%	75	98	6.0	3

#### Table 4.1 – Catchment Parameters

As previously described, a geotechnical investigation was completed for the Site by MTE. Based on the underlaying sand and glacial till soils, a pervious CN of 75 for grassed areas is appropriate.

In order to achieve the stormwater requirements for the Site, runoff generated from Catchments 201 and 202 will be conveyed to CB1 and CBMH2, wherein the flow will be controlled with the installation of a 50mm online orifice plate on the outlet pipe at CBMH2, and a 6.0m wide weir at the driveway entrance to the parking Site. Storage volume for the orifice and weir will be provided within the parking lot and landscaped amenity area. The following table summarizes the total flows generated by the Site for each storm event.

Modelling Condition	Pre-Development (m <sup>3</sup> /s)	Post-Development (m <sup>3</sup> /s)
2-Year Storm Event	0.010	0.008
5-Year Storm Event	0.015	0.008
10-Year Storm Event	0.019	0.010
25-Year Storm Event	0.025	0.012
50-Year Storm Event	0.030	0.013
100-Year Storm Event	0.036	0.015

#### Table 4.2 – Summary of Flows

The total post-development peak flows from the Site are less than pre-development rates for all of the modelled storm events.

The maximum ponding depth in the parking lot is 0.20m for the 100-year storm event. Refer to Appendix B for the MIDUSS outputs.









## 4.3 Water Quality Control

A Stormceptor Model EFO4 will be installed on the storm sewer system to provide water quality control for the Site. The chosen unit is expected to provide Enhanced (Level 1) water quality control. Refer to Appendix C for the sizing output from the Stormceptor Expert program. The Stormceptor will require regular annual maintenance to ensure it is operating properly. The owner may be required to enter into a maintenance agreement with a suitable contractor to complete this work. In addition, all the storm structures will have a 600mm sump.

## 4.4 Erosion and Sedimentation Control

Precautions will need to be taken during construction to limit erosion and sedimentation. Typically, the following measures are recommended during construction for erosion and sedimentation control:

- Erosion and sedimentation facilities are to be installed prior to any area grading operations;
- ii) All erosion control measures are to be inspected and monitored by the contractor and repairs are to be completed as required;
- iii) All materials and equipment used for the purpose of site preparation and project completion should be operated and stored in a manner that prevents any deleterious substance from leaving the site; and,
- iv) To minimize the amount of mud being tracked onto the roadway, a mud mat should be installed at the primary construction entrance.

## 5.0 CONCLUSIONS

Based on the foregoing, it is concluded that:

- i) Municipal infrastructure for water and sanitary is available on Parkside Drive East;
- ii) Municipal infrastructure for storm is available on St. David Street North / Highway 6;
- iii) The proposed grading design will respect the natural topography of the Site to achieve a reasonable cut/fill balance where possible and match into existing grades along all property boundaries; and,
- iv) The SWM criteria can be satisfied with the implementation of on-site controls for water quantity.

Detailed grading and servicing designs and a detailed stormwater management design will be provided during detailed design in support of Site Plan Approval and Building Permits.

All of which is respectfully submitted,

#### **MTE Consultants Inc.**

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# **Design Sheets**





# 750 St. David St. N

FIRE FLOW DEMANDS

 Fergus, Ontario

 Project #:
 54925-100

 Date:
 May 24, 2024

 Date Printed:
 5/28/2024

 By:
 GLV

									Fire Flow <sup>2,3</sup>																			
		Developm	ent Info	ormation <sup>1,2</sup>				Ontario Building Code						Fire Underwriters Survey														
Node ID / Area ID / Building #	F.F.E. (m.a.s.l.)	Description	# of Units	Population	Bldg Area (1 <sup>st</sup> Floor)	Total Bldg Area (3 floors)	Building Volume	к	V	S <sub>tot</sub>	Q	F	F	С	<b>A</b>	F	<b>(2)</b> Occupancy Reduction	<b>(3)</b> Sprinkler Protection	<b>(4)</b> Building Exposure	F	F	Fire Flow (Max OBC/FUS)	MOE Guidelines	Average Day	Max Day	Peak Hour	Minimum Hour	Max Day + Fire Flow
				# of people	m²	m²	m°		m°		L	L/min	L/s		m²	L/min				L/min	L/s	L/s	L/s	L/s	L/s	L/s	L/s	L/s
Units 1-12	423.68	Townhouses	12	29	312	936	4,680	23	4,680	2.00	215,280	6,300	105	1.50	936	10,096	-15%	0%	20%	10,000	167	167	0.076	0.076	0.101	0.315	0.031	167
		TOTALS FOR SITE	12	29							Max Fire	Flow =	105						Max Fir	Flow =	167	167	0.08	0.08	0.10	0.31	0.03	167
																					Ś	Sum of Ma	ximum Da	v Flows +	- Largest	Fire Flo	ow (L/s) =	167

#### **Assumptions:**

1 Number of units are based on the Conceptual Plan by Fryett Turner Architects Inc., dated April 24, 2024

2 Residential population is calculated using a Persons Per Unit (PPU) count taken from "Region of Waterloo Water and Wastewater Monitoring Report" (WWWMR) (Region of Waterloo, June 2021)

Residential = 3.25 PPU for Single and Semi-Detached houses

Residential = 2.44 PPU for Townhouses

3 All buildings are classified as occupancy group C (Residential Occupancy)

4 Average Daily Demands for each building are based on "Tri City Water Distribution Master Plan Final Report" by AECOM, Dated May 2009:

Residential = 225 L/cap/day

5 Peaking Factors based on "Design Guidelines for Drinking-Water Systems" (MOE, 2008):

Average Day =	1
Maximum Day =	2.75
Peak Hour =	4.13
Minimum Hour =	0.4

6 Maximum Day Demand is based on "Centre Wellington Reserve Capacity Calculations (RCC) (2021)

Maximum Day = 297 L/capita/day

750 St. David Street									Desi	gn Paramete	ers					
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Township of Centre Wellington																
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Checked By:	CAD							c =	0.6877							
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STREET	AREA FF	ROM TO MH MH	AREA (A)	COEFF. (C)	AxC	CUMUL. A x C	TOTAL	TIME IN PIPE	INTENSITY (I)	FLOW (Q)	PIPE SIZE	LENGTH	SLOPE	CAPACITY	FULL FLOW VELOCITY	PIPE FULL
			ha		ha	ha	min	min	mm/hr	L/s	mm	т	%	L/s	m/s	%
Controlled Flow	CB1	CBMH5	0.148	3	5-year und	 controlled flow	/ taken from	MIDUSS model	ß	6.00000	300	80.0	0.50	68.37776	0.9673	8.77
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750 St. David Stree	et														De	sign F	Parameter	rs										
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TOWNSHIP OF CENTRE	WELLING	GTON								Residential 350.00 L/capita/day Min. Velocity 0.6 m/sec																		
				EN	GINEERI	NG AND	PUBLI	C WORK	(S	Comme	ercial	1.16	L/s/ha			Max. Velocity 3.0 m/sec										$\mathbf{V}$		
Project Number:	54925	-100								Industrial 0.50 L/s/ha Residential Harmon Peak								on Peaking	Factor (F)	F = 1 + 14	4/(4 + P <sup>0.5</sup> )							
Date:	May 2	8, 2024		Drainage A	rea Plan No:			n/a		Inst. / S	school	0.25	L/s/ha			Comm	ercial Peak	ing Factor	= 2.5									
Design By:	GLV															Reside	ential Areas	Infiltration	0.15	L/s/ha								
Checked By:	CAD	5\100\SAN\540	25-100-100 Sanita	ny Sewer Design	Sheet vis																							
LOCATION RESIDENTIAL AREAS AND POPULATION SCHOOL, COMMERCIAL									CIAL		INDUSTR	RIAL		IN	IFILTRATI	ON	DESIGN											
	No											HECT																
	AREA	MANHO	LE LOCATION				CUMUL	PEAK	PEAK		0.25	I/s/ha		1 16	OF EACE		0.50	) I /s/ha	TOTALS-		CUMUL	INFIL	TOTAL					FULL FLOW
STREET	NO.	FROM	ТО	AREA	2.44	POPUL.	POPUL.	FACTOR	RES.		CUMUL	PEAK		CUMUL	PEAK		CUMUL	PEAK		AREA	AREA	FLOW	VOLUME	LENGTH	SLOPE	PIPE SIZE	CAPACITY	VELOCITY
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				ha		1000s	1000s		L/sec	ha	ha	L/sec	ha	ha	L/sec	ha	ha	L/sec	L/sec	ha	ha	L/sec	L/sec	т	%	mm	L/sec.	m/s
Proposed development		Buildina	MH1A	0.148	12.00	0.029	0.029	4.356417	0.5167											0.14	8 0.148	0.0222	0.5389	18.4	2.00	200	46.3604	1.476
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# **MIDUSS** Output



**Pre-Development** 



"			MIDUSS Output	· · · · · · · · · · · · · · · · · · ·
"			MIDUSS version	Version 2.25 rev. 473"
"			MIDUSS created	Sunday, February 7, 2010"
"		10	Units used:	ie METRIC"
"			Job folder:	Q:\54925\100\SWM\2-Year-Pre"
"			Output filename:	2-Year-Pre.out"
"			Licensee name:	Α"
"			Company	п
"			Date & Time last used:	5/27/2024 at 10:41:47 AM"
"	31	TI	ME PARAMETERS"	
"		5.000	Time Step"	
"		180.000	Max. Storm length"	
"		1500.000	Max. Hydrograph"	
"	32	ST	ORM Chicago storm"	
"		1	Chicago storm"	
"		375.000	Coefficient A"	
"		0.240	Constant B"	
"		0.689	Exponent C"	
"		0.400	Fraction R"	
"		180.000	Duration"	
		1.000	Time step multiplier"	
"		Ma	ximum intensity 119.788	mm/hr"
"		То	tal depth 31.396	mm''
"		6	002hvd Hvdrograph extension used	I in this file"
	33	CA	TCHMENT 101"	
		1	Triangular SCS"	
		1	Equal length"	
		- 1	SCS method"	
		101	Whole pre-dev site"	
		26.200	% Impervious"	
		0.148	Total Area"	
		5,400	Flow length"	
		1.400	Overland Slope"	
		0.109	Pervious Area"	
		5,400	Pervious length"	
		1.400	Pervious slope"	
		0.039	Impervious Area"	
		5,400	Impervious length"	
		1,400	Impervious slope"	
		0.250	Pervious Manning 'n'"	
		75,000	Pervious SCS Curve No."	
		0 155	Pervious Runoff coefficient"	
		0.199	Pervious Ta/S coefficient"	
		8,467	Pervious Initial abstraction"	
		0.407	Tmpervious Manning 'n'"	
		98,000	Impervious SCS Curve No "	
		0,805	Impervious Runoff coefficient"	
"		0,100	Impervious Ia/S coefficient"	
"		0.518	Impervious Initial abstraction"	
		0.910	0.010 0.000 0.000	0.000 c.m/sec"
			0.010 0.000 0.000	0.000 c.m/ Sec

"		Catchm	ent 101		Pervi	Lous	Imper	vious	Total	Area	
"		Surfac	e Area		0.109	)	0.039		0.148		hectare"
"		Time o <sup>.</sup>	f concentr	ration	10.83	38	0.852		4.368		minutes"
"		Time to	o Centroid	t	122.3	385	91.39	7	102.3	08	minutes"
"		Rainfa	ll depth		31.39	96	31.39	6	31.39	6	mm"
"		Rainfa	ll volume		34.29	)	12.17		46.47		c.m"
"		Rainfa	ll losses		26.51	L8	6.113		21.17	2	mm''
"		Runoff depth 4		4.878	3	25.28	3	10.22	4	mm''	
"		Runoff	volume		5.33		9.80		15.13		c.m"
"		Runoff	coefficie	ent	0.155	5	0.805		0.326		
"		Maximu	laximum flow		0.002	2	0.010		0.010	)	c.m/sec"
"	40	HYDROG	RAPH Add F	Runoff '							
"		4 Add	Runoff "								
"			0.010	0.010	9	0.000	0	.000"			
"	40	HYDROG	RAPH Copy	to Out	flow"						
"		8 Cop	y to Outf]	Low"							
"			0.010	0.010	9	0.010	0	.000"			
"	38	START/	RE-START 1	TOTALS 1	101"						
"		3 Run	off Totals	s on EXI	IT"						
"		Total	Catchment	area				0	.148	hec	tare"
"		Total [	Impervious	s area				0	.039	hec	tare"
"		Total S	% impervio	bus				26	.200"		
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п		Job folder:		Q:\54925\100\SWM\"
п				-
MI	DUSS\5-Year-Pr	re"		
п		Output filename:		5-Year-Pre.out"
п		Licensee name:		Α"
u.		Company		п
u.		Date & Time last used:		5/16/2024 at 11:41:21 AM"
" 3	3 <b>1</b> TI	IME PARAMETERS"		
п	5.000	Time Step"		
п	180.000	Max. Storm length"		
п	1500.000	Max. Hydrograph"		
" 3	32 ST	FORM Chicago storm"		
п	1	Chicago storm"		
п	500.000	Coefficient A"		
п	0.240	Constant B"		
п	0.688	Exponent C"		
п	0 400	Eraction R"		
п	180 000	Duration"		
п	1,000	Time sten multinlier"		
п	1.000 Ma	aximum intensity	159 982	mm/hr"
	Te	atal denth	42 079	mm"
п	6	005hvd Hvdrogranh ext	tension used	in this file"
и ;	יי ער בא	ATCHMENT 101"	cension used	
	1 S	Triangular SCS"		
п	1	Faugl length"		
п	1	SCS method"		
	101	Whole pre-dev site"		
	26 200	% Impervious"		
п	0 1/8	Total Area"		
п	5 400	Flow length"		
п	1 /00	Overland Slope"		
п	0 100	Pervious Area"		
п	5 400	Pervious length"		
п	1 400	Penvious slope"		
п	0,020	Tmpopujous Apop"		
	5 400	Impervious Area		
	1 400	Impervious rengen		
п	1.400	Denvious Manning 'n'"		
	0.250	Pervious Manning II		
п	/5.000	Pervious SCS Curve No.	siont"	
п	0.220	Pervious Runott Coettic	Lient	
	0.100	Pervious 1a/3 coerricte		
	ð.46/	Tervious initial abstra		
п	00.000	Imperivious Manning n	<b>、</b> "	
	98.000	Impervious SCS Curve No	J. Ficiont"	
	0.035	Imperivious Runott COett	ricient	
	0.100	impervious la/S coeffic	cienτ"	

"		0.518	Impervious	Initial	abstra	action'	•			
"			0.015	0.00	00	0.000	0.000	c.m/sec'	1	
"		C	atchment 101		Perv	ious	Imperviou	s Total A	Area	"
"		S	urface Area		0.109	9	0.039	0.148		hectare"
"		Т	ime of concer	ntration	7.676	0	0.748	3.744		minutes"
"		Т	ime to Centro	oid	115.8	842	90.501	101.469	)	minutes"
"		R	ainfall deptH	า	42.07	79	42.079	42.079		mm"
"		R	ainfall volur	ne	46.02	2	16.34	62.36		c.m"
"		R	ainfall loss	es	32.56	60	6.941	25.848		mm"
"		R	unoff depth		9.519	9	35.138	16.231		mm"
"		R	unoff volume		10.41	1	13.64	24.05		c.m"
"		R	unoff coeffic	cient	0.226	6	0.835	0.386		н
"		M	aximum flow		0.005	5	0.014	0.015		c.m/sec"
"	40	H	YDROGRAPH Add	d Runoff						
"		4	Add Runoff							
"			0.015	0.01	.5	0.000	0.000			
"	40	H	YDROGRAPH Cop	by to Out	flow"					
"		8	Copy to Out	tflow"						
"			0.015	0.01	.5	0.015	0.000			
"	38	S	TART/RE-STAR	T TOTALS	101"					
"		3	Runoff Tota	als on EX	(IT"					
"		Т	otal Catchmer	nt area				0.148	hect	are"
"		Т	otal Impervio	ous area				0.039	hect	are"
"		Т	otal % imperv	vious			2	6.200"		
"	19	E	XIT"							

"			MIDUSS Output	· · · · · · · · · · · · · · · · · · ·
"			MIDUSS version	Version 2.25 rev. 473"
"			MIDUSS created	Sunday, February 7, 2010"
"		10	Units used:	ie METRIC"
"			Job folder:	Q:\54925\100\SWM\10-Year-Pre"
"			Output filename:	10-Year-Pre.out"
"			Licensee name:	Α"
"			Company	п
"			Date & Time last used:	5/27/2024 at 10:43:43 AM"
"	31	TI	ME PARAMETERS"	
"		5.000	Time Step"	
"		180.000	Max. Storm length"	
"		1500.000	Max. Hydrograph"	
"	32	ST	ORM Chicago storm"	
"		1	Chicago storm"	
"		595.000	Coefficient A"	
"		0.360	Constant B"	
"		0.691	Exponent C"	
"		0.400	Fraction R"	
"		180.000	Duration"	
		1.000	Time step multiplier"	
"		Ma	ximum intensity 186.49	)4 mm/hr"
"		То	tal depth 49.27	'7 mm''
"		6	010hvd Hvdrograph extension u	used in this file"
	33	CA	TCHMENT 101"	
		1	Triangular SCS"	
		- 1	Faual length"	
		1	SCS method"	
		101	Whole pre-dev site"	
		26.200	% Impervious"	
		0.148	Total Area"	
		5,400	Flow length"	
		1.400	Overland Slope"	
		0.109	Pervious Area"	
		5,400	Pervious length"	
		1.400	Pervious slope"	
		0.039	Impervious Area"	
		5,400	Impervious length"	
		1,400	Impervious slope"	
		0.250	Pervious Manning 'n'"	
		75.000	Pervious SCS Curve No."	
		0.266	Pervious Runoff coefficient"	
		0.100	Pervious Ta/S coefficient"	
		8.467	Pervious Initial abstraction"	
"		0.015	Impervious Manning 'n'"	
		98,000	Impervious SCS Curve No "	
		0,847	Impervious Runoff coefficient"	
		0,100	Impervious Ta/S coefficient"	
"		0.518	Impervious Initial abstraction"	
		0.510	0.019 0.000 0.000	0.000 c.m/sec"
			0.019 0.000 0.000	0.000 C.m/ SCC

"		Cato	hment 101		Pervi	Lous	Imper	vious	Tota	l Area	"
"		Surf	ace Area		0.109	)	0.039		0.148	3	hectare"
"		Time	e of concent	ration	6.577	6.577 0.700		3.463	1	minutes"	
"		Time	e to Centroi	d	113.0	943	89.95	8	100.8	302	minutes"
"		Rain	fall depth		49.27	77	49.27	7	49.27	77	mm"
"		Rain	fall volume	2	53.82	2	19.11		72.93	3	c.m"
"		Rain	fall losses	5	36.15	52	7.543		28.65	57	mm''
"		Runoff depth		13.12	25	41.73	4	20.62	20	mm''	
"		Runo	off volume		14.34	1	16.18		30.52	2	c.m"
"		Runo	off coeffici	.ent	0.266	5	0.847		0.418	3	"
"		Maxi	mum flow.		0.008	3	0.016		0.019	9	c.m/sec"
"	40	HYDR	OGRAPH Add	Runoff '							
"		4 A	dd Runoff "	I							
"			0.019	0.019	9	0.000	0	.000"			
"	40	HYDR	OGRAPH Copy	v to Out	Flow"						
"		8 C	Copy to Outf	low"							
"			0.019	0.019	9	0.019	0	.000"			
"	38	STAR	T/RE-START	TOTALS 1	101"						
"		3 R	unoff Total	s on EXI	LT"						
"		Tota	l Catchment	area				0	.148	hec	tare"
"		Tota	l Imperviou	is area				0	.039	hec	tare"
"		Tota	ıl % impervi	.ous				26	.200"		
"	19	EXIT	• 11								

"			MIDUSS Output	>"
"			MIDUSS version	Version 2.25 rev. 473"
"			MIDUSS created	Sunday, February 7, 2010"
"		10	Units used:	ie METRIC"
"			Job folder:	Q:\54925\100\SWM\25-Year-Pre"
"			Output filename:	25-Year-Pre.out"
"			Licensee name:	Α"
"			Company	п
"			Date & Time last used:	5/27/2024 at 10:49:34 AM"
"	31	TI	ME PARAMETERS"	
"		5.000	Time Step"	
"		180.000	Max. Storm length"	
"		1500.000	Max. Hydrograph"	
"	32	ST	ORM Chicago storm"	
"		1	Chicago storm"	
"		702.000	Coefficient A"	
"		0.350	Constant B"	
"		0.690	Exponent C"	
"		0.400	Fraction R"	
"		180.000	Duration"	
		1.000	Time step multiplier"	
"		Ma	ximum intensity 220.68	5 mm/hr"
"		То	tal depth 58.44	4 mm"
"		6	025hvd Hvdrograph extension us	sed in this file"
"	33	CA	TCHMENT 101"	
		1	Triangular SCS"	
		1	Foual length"	
		- 1	SCS method"	
		101	Whole pre-dev site"	
		26.200	% Impervious"	
		0.148	Total Area"	
		5,400	Flow length"	
		1,400	Overland Slope"	
		0,100	Pervious Area"	
		5,400	Pervious length"	
		1,400	Pervious slope"	
		0 039	Impervious Area"	
		5 400	Impervious length"	
		1 400	Impervious slope"	
		0 250	Pervious Manning 'n'"	
п		75 000	Pervious SCS Curve No "	
		0 316	Pervious Runoff coefficient"	
		0.510	Pervious Ta/S coefficient"	
		8 167	Pervious Initial abstraction"	
		0.407	Tmpervious Manning 'n'"	
		0.010	Impervious SCS Cupye No "	
		0 257	Impervious SCS Curve NO. Impervious Runoff coefficient"	
		0.057	Impenvious Ta/S coefficient"	
		0.100 0.100	Impenvious Initial abstraction"	
		0.10		0 000 c m/soc"
			0.025 0.000 0.000	0.000 (.11/380

"		Catchment 101	Pervious	Impervious	Total Area	
"		Surface Area	0.109	0.039	0.148	hectare"
"		Time of concentration	5.650	5.650 0.652		minutes"
"		Time to Centroid	110.343	89.478	100.113	minutes"
"		Rainfall depth	58.444	58.444	58.444	mm"
"		Rainfall volume	63.83	22.66	86.50	c.m"
"		Rainfall losses	39.958	8.361	31.680	mm"
"		Runoff depth	18.485	50.083	26.764	mm"
"		Runoff volume	20.19	19.42	39.61	c.m"
"		Runoff coefficient	0.316	0.857	0.458	"
"		Maximum flow	0.012	0.020	0.025	c.m/sec"
"	40	HYDROGRAPH Add Runoff	"			
"		4 Add Runoff "				
"		0.025 0.02	5 0.000	0.000"		
"	40	HYDROGRAPH Copy to Out	flow"			
"		8 Copy to Outflow"				
"		0.025 0.02	5 0.025	0.000"		
"	38	START/RE-START TOTALS	101"			
"		3 Runoff Totals on EX	IT"			
"		Total Catchment area		0	.148 hec	tare"
"		Total Impervious area		0	.039 hec	tare"
"		Total % impervious		26	.200"	
"	19	EXIT"				

"			MIDUSS Output	»"
"			MIDUSS version	Version 2.25 rev. 473"
"			MIDUSS created	Sunday, February 7, 2010"
"		10	Units used:	ie METRIC"
"			Job folder:	Q:\54925\100\SWM\50-Year-Pre"
"			Output filename:	50-Year-Pre.out"
"			Licensee name:	Α"
"			Company	п
"			Date & Time last used:	5/27/2024 at 10:58:12 AM"
"	31	TI	ME PARAMETERS"	
"		5.000	Time Step"	
"		180.000	Max. Storm length"	
"		1500.000	Max. Hydrograph"	
"	32	ST	ORM Chicago storm"	
"		1	Chicago storm"	
"		780.000	Coefficient A"	
"		0.360	Constant B"	
"		0.690	Exponent C"	
"		0.400	Fraction R"	
"		180.000	Duration"	
		1.000	Time step multiplier"	
"		Ma	ximum intensity 244.8	90 mm/hr"
"		То	tal depth 64.9	35 mm"
"		6	050hvd Hvdrograph extension	used in this file"
	33	CA	TCHMENT 101"	
		1	Triangular SCS"	
		- 1	Faual length"	
		1	SCS method"	
		101	Whole pre-dev site"	
		26.200	% Impervious"	
		0.148	Total Area"	
		5,400	Flow length"	
		1,400	Overland Slope"	
		0,109	Pervious Area"	
		5,400	Pervious length"	
		1,400	Pervious slope"	
		0.039	Impervious Area"	
		5,400	Impervious length"	
		1,400	Impervious slope"	
		0 250	Pervious Manning 'n'"	
		75,000	Pervious SCS Curve No."	
		0 347	Pervious Runoff coefficient"	
		0.347	Pervious Ta/S coefficient"	
		8 467	Pervious Initial abstraction"	
		0.407	Impervious Manning 'n'"	
		98,000	Impervious SCS Curve No "	
		0.862	Impervious Runoff coefficient"	
		0,100	Impervious Ta/S coefficient"	
		0,518	Impervious Initial abstraction	"
		0.910		0.000 c.m/sec"
			0.000 0.000	0.000 c.m/ Sec

"		Catchment 101	Pervious	Impervious	Total Area	a "
"		Surface Area	0.109	0.039	0.148	hectare"
"		Time of concentration	on 5.175	0.624	3.042	minutes"
"		Time to Centroid	108.910	89.171	99.658	minutes"
"		Rainfall depth	64.935	64.935	64.935	mm"
"		Rainfall volume	70.92	25.18	96.10	c.m"
"		Rainfall losses	42.416	8.976	33.654	mm"
"		Runoff depth	22.519	55.959	31.281	mm"
"		Runoff volume	24.60	21.70	46.30	c.m"
"		Runoff coefficient	0.347	0.862	0.482	"
"		Maximum flow	0.015	0.022	0.030	c.m/sec"
"	40	HYDROGRAPH Add Runof	f "			
"		4 Add Runoff "				
"		0.030 0.	030 0.000	0.000"		
"	40	HYDROGRAPH Copy to C	)utflow"			
"		8 Copy to Outflow"				
"		0.030 0.	030 0.030	0.000"		
"	38	START/RE-START TOTAL	.S 101"			
"		3 Runoff Totals on	EXIT"			
"		Total Catchment area	1	0	.148 hec	tare"
"		Total Impervious are	a	0	.039 hec	tare"
"		Total % impervious		26	.200"	
"	19	EXIT"				

"		MIDUSS Output		>"
"		MIDUSS version		Version 2.25 rev. 473"
"		MIDUSS created		Sunday, February 7, 2010"
"	10	Units used:		ie METRIC"
"		Job folder:		Q:\54925\100\SWM\"
"				
M	[DUSS\100-Year	-Pre"		
"		Output filename:		Default.Out"
"		Licensee name:		Α"
"		Company		п
"		Date & Time last used:		5/16/2024 at 9:28:29 AM"
"	31 T	IME PARAMETERS"		
"	5.000	Time Step"		
	180.000	Max. Storm length"		
	1500.000	Max. Hydrograph"		
	32 5	TORM Chicago storm"		
	1	Chicago storm"		
	851 000	Coefficient A"		
	0 290	Constant B"		
	0.230	Exponent C"		
	0.007	Experience C Eraction R"		
	180 000	Duration"		
	1 000	Time step multiplier"		
	1.000 M	avimum intensity	270 966	mm/hn"
	14 T	atal dopth	71 079	mm"
	c I	100byd Hydnograph oy	11.970	""" in this file"
	o در	ATCUMENT 101"	cension used	IN UNIS TILE
	55 C	Triangulan SCS"		
	1	Fridigular SCS		
	1	Equal length		
	101	SCS method		
	101	Whole pre-dev site		
	26.200	% Impervious		
	0.148	lotal Area"		
	5.400	Flow length"		
	1.400	Overland Slope"		
	0.109	Pervious Area		
	5.400	Pervious length"		
	1.400	Pervious slope"		
	0.039	Impervious Area"		
	5.400	Impervious length"		
"	1.400	Impervious slope"		
"	0.250	Pervious Manning 'n'"		
"	75.000	Pervious SCS Curve No.		
"	0.376	Pervious Runoff coeffi	cient"	
"	0.100	Pervious Ia/S coefficio	ent"	
"	8.467	Pervious Initial abstra	action"	
"	0.015	Impervious Manning 'n'		
"	98.000	Impervious SCS Curve No	o."	
"	0.866	Impervious Runoff coef	ficient"	
"	0.100	Impervious Ia/S coeffi	cient"	

"		0.518	Impervious	Initial	abstra	action'	•			
"			0.036	0.00	90	0.000	0.000 (	c.m/sec"		
"		Ca	atchment 101		Perv	ious	Impervious	Total A	rea	н
"		Su	urface Area		0.109	9	0.039	0.148		hectare"
"		Ti	ime of conce	ntration	4.769	9	0.598	2.894		minutes"
"		Ti	ime to Centro	oid	107.	792	88.944	99.319		minutes"
"		Ra	ainfall dept	h	71.9	78	71.978	71.978		mm"
"		Ra	ainfall volu	ne	78.72	2	27.95	106.67		c.m"
"		Ra	ainfall loss	es	44.88	87	9.666	35.659		mm"
"		Rι	unoff depth		27.09	91	62.312	36.319		mm"
"		Rı	unoff volume		29.63	3	24.19	53.82		c.m"
"		Rι	unoff coeffi	cient	0.376	6	0.866	0.505		II
"		Ma	aximum flow		0.019	9	0.024	0.036		c.m/sec"
"	40	H١	DROGRAPH Ad	d Runoff	"					
"		4	Add Runoff	н						
"			0.036	0.03	36	0.000	0.000"			
"	40	H	DROGRAPH Co	py to Out	flow"					
"		8	Copy to Ou	tflow"						
"			0.036	0.03	36	0.036	0.000"			
"	38	ST	TART/RE-STAR	T TOTALS	101"					
"		3	Runoff Tot	als on E>	(IT"					
"		Тс	otal Catchme	nt area			0.	148	hect	are"
"		Тс	otal Impervi	ous area			0.	.039	hect	are"
"		Тс	otal % imper	vious			26.	200"		
"	19	EΣ	KIT"							

**Post-Development** 



"			MIDUSS Output	>"
"			MIDUSS version Version 2.25 rev. 47	3"
"			MIDUSS created Sunday, February 7, 2010	Э"
"		10	Units used: ie METRIC	c"
"			Job folder: Q:\54925\100\SWM\2-Year-Post	t"
"			Output filename: 2-Year-Post.out	t"
"			Licensee name:	4"
			Company	
			Date & Time last used: 5/27/2024 at 10:39:17 AV	٧"
"	31	ТТ	ME PARAMETERS"	•
"	-	5.000	Time Step"	
		180.000	Max. Storm length"	
		1500,000	Max. Hydrograph"	
	32	ST	"ORM Chicago storm"	
	52	1	Chicago storm"	
		375 000	Coefficient A"	
		9 240	Constant B"	
		0.240	Exponent ("	
п		0.005	Exponent C	
п		180 000	Dupation"	
		1 000	Time stop multiplion"	
		1.000 Ma	110782  mm/hn''	
		Па	$\begin{array}{cccc} 113.786 & \text{mm}/11 \\ 113.786 & \text{mm}'' \\ 113.786 & \text{mm}$	
		6	AA2byd Hydnograph avtancian ysad in this file"	
	22	о С А	TCUMENT 201"	
	22	1	Triangulan SCC"	
		1	Fauld longth"	
		1	Equal length	
		1	SCS Methou	
		201	KOOTLOP APea	
		100.000	% Impervious	
		0.032	Iotal Area	
		15.000	Flow length	
		10.000	Overland Slope"	
		0.000	Pervious Area	
		15.000	Pervious length"	
		10.000	Pervious slope"	
		0.032	Impervious Area"	
		15.000	Impervious length"	
		10.000	Impervious slope"	
		0.250	Pervious Manning 'n'"	
		75.000	Pervious SCS Curve No."	
		0.000	Pervious Runoff coefficient"	
		0.100	Pervious Ia/S coefficient"	
		8.467	Pervious Initial abstraction"	
		0.015	Impervious Manning 'n'"	
		98.000	Impervious SCS Curve No."	
		0.806	Impervious Runott coefficient"	
		0.100	Impervious Ia/S coefficient"	
"		0.518	Impervious Initial abstraction"	
"			0.008 0.000 0.000 0.000 c.m/sec"	

"	Catchment 201	Pervious	Impervious	Total Area	п
"	Surface Area	0.000	0.032	0.032	hectare"
"	Time of concentration	11.092	0.871	0.871	minutes"
"	Time to Centroid	122.702	91.362	91.362	minutes"
"	Rainfall depth	31.396	31.396	31.396	mm"
"	Rainfall volume	0.00	10.05	10.05	c.m"
"	Rainfall losses	26.516	6.096	6.096	mm"
"	Runoff depth	4.880	25.300	25.300	mm"
"	Runoff volume	0.00	8.10	8.10	c.m"
"	Runoff coefficient	0.000	0.806	0.806	п
"	Maximum flow	0.000	0.008	0.008	c.m/sec"
"	40 HYDROGRAPH Add Runoff	н			
"	4 Add Runoff "				
"	0.008 0.00	0.000	0.000"		
"	40 HYDROGRAPH Copy to Out	tflow"			
"	8 Copy to Outflow"				
"	0.008 0.00	0.008	0.000"		
"	40 HYDROGRAPH Next link '	1			
"	5 Next link "				
"	0.008 0.00	0.008	0.000"		
"	33 CATCHMENT 202"				
"	1 Triangular SCS"				
"	1 Equal length"				
"	1 SCS method"				
"	202 Controlled Area"				
"	61.900 % Impervious"				
	0.080 Total Area"				
	12.300 Flow length"				
	3.300 Overland Slope"				
	0.030 Pervious Area"				
	12.300 Pervious length"				
"	3.300 Pervious slope"				
	0.050 Impervious Area"				
	12.300 Impervious length"				
	3.300 Impervious slope"				
	0.250 Pervious Manning 'r	י"			
	75.000 Pervious SCS Curve	No."			
	0.155 Pervious Runoff coe	efficient"			
	0.100 Pervious Ia/S coeff	ficient"			
	8.467 Pervious Initial at	ostraction"			
	0.015 Impervious Manning	'n'"			
	98.000 Impervious SCS Curv	/e No."			
	0.813 Impervious Runoff	coefficient"			
	0.100 Impervious Ta/S co	efficient"			
	0.518 Impervious Initial	abstraction	u		
	0.510 impervious initial 0.012 0.00	AS 0 002	0 000	.m/sec"	
	Catchment 202	Pervious	Impervious	Total Area	
	Surface Area	0.030	0.050	0.080	hectare"
	Time of concentration	13.732	1.079	2.411	minutes"
	Time to Centroid	126 151	91 572	95 211	minutes"
		TC1.17T	77.712		minuces

"       Rainfall volume       9.57       15.55       25.12       c.m"         Runoff depth       4.878       25.523       17.657       mm"         "       Runoff coefficient       0.155       0.813       0.562       "         "       Maximum flow       0.000       0.012       0.012       c.m/sec"         "       Maximum flow       0.000       0.000"       *       *         "       4       Add Runoff "       *       *       0.012       0.020       0.008       0.000"         *       4       Add Runoff "       *       0.012       0.020       0.008       0.000"         *       4       Add Runoff *       *       0.012       0.020       0.008       0.000"         *       4.020       Current peak flow c.m/sec"       *       0.015       Target outflow c.m/sec"       *         *       9.00D DESIGN"       *       *       420.801       Maximu water level metre"       *       422.801       Maximu water level metre"       422.801       Maximu water level metre"       *       422.801       0.000"       *       422.801       0.00551       1.01E-05"       *       *       421.860       0.0051       7.462"	"	Rainfall depth	31.396	31.396	31.396	mm"
<pre>" Rainfall losses 26.518 5.873 13.739 mm" Runoff depth 4.878 25.523 17.657 mm" Runoff coefficient 0.155 0.813 0.562 " " Maximum flow 0.000 0.012 0.012 c.m" " Maximum flow 0.000 0.012 0.012 c.m/sec" " 4 Add Runoff " " 4 Add Runoff " " 0.012 0.020 0.008 0.000" "54 POND DESIGN" " 0.015 Target outflow c.m/sec" " 2.2.2 Hydrograph volume c.m" " 7. Number of stages" " 420.801 Minimum water level metre" " 420.801 Minimum water level metre" " 420.801 Minimum water level metre" " 420.801 Minimum water level metre" " 420.801 Minimum water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Object (Level Discharge Volume" " 421.860 0.00558 1.01E-05" " 421.960 0.00558 1.04E-05" " 422.110 0.00568 1.244" " 421.960 0.00568 1.244" " 422.806 0.00607 45.015" " 422.100 0.00568 1.244" " 422.806 0.00607 45.015" " 422.806 0.00607 45.015" " 422.806 0.006067 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 45.015" " 422.806 0.00667 4.5015" " 422.806 0.00667 4.5015" " 422.806 0.00667 4.5015" " 422.806 0.00667 4.5015" " 422.806 0.00667 4.5015" " 422.806 0.00667 4.5015" " 422.806 0.0066 7.m/sec" " 420.801 0.630 0.000" " 1. ORIFICES" " Crest Weir Crest Left Right" " elevation coefficie diameter orifices" " 420.801 0.630 0.0006 0.000" " 1. ORIFICES" " Crest Weir Crest Left Right" " elevation coefficie diameter orifices" " 420.801 0.630 0.0066 0.0000 c.m/sec" " Maximum level 421.940 metre" " 6.0012 0.020 0.006 0.0096 c.m/sec" " Maximum level 421.940 metre" " 6.0012 0.020 0.006 0.0096 c.m/sec" " 40 HYDROGRAPH Combine 1" " 6.0012 0.020 0.006 0.0096" " 1. Node #" " 0.012 0.020 0.006 0.0</pre>	"	Rainfall volume	9.57	15.55	25.12	c.m"
Runoff depth       4.878       25.523       17.657       mm"         Runoff volume       1.49       12.64       14.13       c.m"         Runoff coefficient       0.155       0.813       0.562       "         "40       HYDROGRAPH Add Runoff"       0.000       0.012       0.012       c.m/sec"         "40       HYDROGRAPH Add Runoff"       0.020       0.008       0.000"         "54       POND DESIGN"       0.012       0.020       0.008       0.000"         "54       POND DESIGN"       0.012       0.020       0.008       0.000"         "420.801       Minimu water level       metre"       "       420.801       Minimu water level       metre"         "420.801       Starting water level       metre"       420.801       0.00055       1.01E-05"         "421.860       0.0055       1.01E-05"       421.910       0.00551       1.244"         "421.910       0.00568       7.462"       421.910       422.060       0.000         "422.060       0.06067       45.015"       422.110       0.1091       68.735"         "422.060       0.0905       1.024"       422.060       0.000       4.000"         "422.060       0.	"	Rainfall losses	26.518	5.873	13.739	mm"
<pre>" Runoff volume 1.49 12.64 14.13 c.m" Runoff coefficient 0.155 0.813 0.562 " "Maximum flow 0.000 0.012 0.012 c.m/sec" "40 HYDROGRAPH Add Runoff " " 4 Add Runoff " " 0.012 0.020 0.008 0.000" "54 POND DESIGN" " 0.020 Current peak flow c.m/sec" " 0.015 Target outflow c.m/sec" " 2.2.2 Hydrograph volume c.m" " 7. Number of stages" " 420.801 Minimum water level metre" " 422.110 Maximum water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 0.00568 1.01E-05" " 421.860 0.00568 1.0244" " 422.010 0.00568 1.244" " 422.010 0.00564 7.462" " 422.010 0.00564 7.462" " 422.010 0.00564 7.462" " 422.010 0.00564 1.244" " 422.010 0.00564 1.244" " 422.010 0.00564 1.244" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.015" " 422.010 0.0066 4.000 0.000" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" " 420.801 0.630 0.0600 1.000" " 1. ORIFICES" " Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.0500 1.000" " 1. ORIFICES" " Orifice Orifice Jeauth sideslope sideslope" " 420.801 0.630 0.0500 1.000" " 1. ORIFICES" " Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.006 0.000 c.m/sec" " Maximum level 421.940 metre" " 0.012 0.020 0.006 0.000 c.m/sec" " Maximum level 421.940 metre" " 0.012 0.020 0.006 0.000 c.m/sec" " Maximum flow 0.006 c.m/sec" " Maximum flow 0.006 c.m/sec" " Maximum flow 0.006 c.m/sec" " 40 HYDROGRAPH Start - New Tributary" " 0.012 HYDROGRAPH Start - New Tributary"</pre>	"	Runoff depth	4.878	25.523	17.657	mm"
<pre>Runoff coefficient 0.155 0.813 0.562 " Maximum flow 0.000 0.012 0.012 c.m/sec" 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 4 Add Runoff " 6.020 Current peak flow c.m/sec" 6.015 Target outflow c.m/sec" 7. Number of stages" 420.801 Minimum water level metre" 422.110 Maximum water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Oxford 0.00555 1.01E-05" 421.910 0.00555 1.01E-05" 421.910 0.00558 1.244" 421.960 0.00558 1.244" 421.910 0.00559 4.22.139" 422.010 0.00559 4.22.139" 422.010 0.00559 4.22.139" 422.010 0.00594 22.139" 422.010 0.00594 22.139" 422.010 0.00594 42.139" 422.010 0.00594 22.139" 422.060 0.900 6.000 0.000" 1. WEIRS" Crest Weir Crest Left Right" elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 1.000" 422.060 0.900 1.000" 422.060 0.900 6.000 0.000" 6.000 0.000" 422.060 0.900 6.000 0.000" 422.060 0.900 0.000" 422.060 0.900 0.000" 422.060 0.900 0.000" 422.060 0.006594 22.139" 422.060 0.006594 22.139" 422.060 0.006594 22.139" 422.060 0.006594 22.139" 422.060 0.006594 42.139" 422.060 0.006594 42.139" 422.060 0.006594 42.139" 422.060 0.000 0.000" 421.940 metre" 420.801 0.630 0.0500 0.000" 1. WEIRS" Crest Weir Crest Left Right" elevation coefficie diameter orifices" 420.801 0.630 0.0500 1.000" 421.940 metre" 420.801 0.639 0.0500 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000" 420.800 0.000 0.000"</pre>	"	Runoff volume	1.49	12.64	14.13	c.m"
<pre>Maximum flow 0.000 0.012 0.012 c.m/sec" 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 6.012 0.020 0.008 0.000" 54 POND DESIGN" 6.020 Current peak flow c.m/sec" 6.015 Target outflow c.m/sec" 7. Number of stages" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum water level metre" 420.801 Minimum Mater level Metre 420.801 Minimum Mater level Metre 420.801 Minimum Mater level Metre 420.801 Minimum Mater level Metre 420.801 Minimum Mater level Metre 420.801 Minimum Level Metre 420.801 Minimum Level Metre 420.801 Minimum Level Metre 420.801 Minimum Level Metre 420.801 Minimum Level Metre 420.801 Minimum Level Metre 420.900 Minimum Level Metre 420.801 Minimum Minimum Minimum Minimum Level Minimum Minimum Level Minimum</pre>	"	Runoff coefficient	0.155	0.813	0.562	н
<pre>40 HYDROGRAPH Add Runoff "</pre>	"	Maximum flow	0.000	0.012	0.012	c.m/sec"
<pre></pre>	"	40 HYDROGRAPH Add Runoff	"			
9.012       0.020       0.008       0.000"         54       POND DESIGN"         "       0.020       Current peak flow c.m/sec"         "       0.015       Target outflow c.m/sec"         "       22.2       Hydrograph volume c.m"         "       22.2       Hydrograph volume c.m"         "       7. Number of stages"         "       420.801       Minimum water level metre"         "       420.801       Starting water level metre"         "       420.801       Starting water level metre"         "       420.801       Starting water level metre"         "       420.801       Starting water level metre"         "       420.801       0.000         "       421.910       0.00555         "       421.910       0.00558         "       422.010       0.00594         "       422.010       0.00591         "       422.010       0.00591         "       422.010       0.0101         "       422.010       0.0100         "       Crest       Weir       Crest         "       Crest       Weir       Crest         "       Orifice	"	4 Add Runoff "				
<pre>54 POND DESIGN" " 0.020 Current peak flow c.m/sec" " 0.0215 Target outflow c.m/sec" " 22.2 Hydrograph volume c.m" " 7. Number of stages" " 420.801 Mininum water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 Starting water level metre" " 420.801 0.000 0.000" " 421.860 0.00555 1.01E-05" " 421.910 0.00568 1.244" " 421.910 0.00568 1.244" " 422.010 0.00594 22.139" " 422.010 0.00594 22.139" " 422.010 0.00594 22.139" " 422.010 0.00597 45.015" " 422.010 0.00597 45.015" " 422.010 0.00597 45.015" " 422.060 0.900 6.000 0.000 0.000" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" " 1. ORFITCES" " Orifice Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.0506 1.000" " Peak outflow 0.0066 c.m/sec" " Maximum level 421.940 metre" " 40.012 0.020 0.006 0.000 c.m/sec" " 40 HYDROGRAPH Combine 1" " 0.012 0.020 0.006 0.000 c.m/sec" " Maximum flow 0.006 c.m/sec" " 40 HYDROGRAPH Start - New Tributary"</pre>	"	0.012 0.02	0.008	0.000		
<pre>" 0.020 Current peak flow c.m/sec" " 0.015 Target outflow c.m/sec" " 22.2 Hydrograph volume c.m" " 7. Number of stages" " 420.801 Minimum water level metre" " 420.801 Minimum water level metre" " 420.801 Starting water level metre" " 420.801 O.000 0.000" " 421.860 0.00555 1.01E-05" " 421.960 0.00554 1.244" " 422.010 0.00554 2.139" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.009594 22.139" " 422.060 0.00607 45.015" " 422.060 0.00607 45.015" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" " 1. ORIFICES" " Orifice Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.0500 1.000" " Peak outflow 0.006 c.m/sec" " Maximum level 421.940 metre" " Maximum storage 4.968 c.m" " Centroidal lag 1.659 hours" " 0.012 0.020 0.006 0.000 c.m/sec" " Hydrograph Volume 1" " 0.020 0.006 c.m/sec" " Hydrograph volume 22.151 c.m" " 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"</pre>	"	54 POND DESIGN"				
<pre> " 0.015 Target outflow c.m/sec" " 22.2 Hydrograph volume c.m" 7. Number of stages" " 420.801 Minimum water level metre" 422.110 Maximum water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 O.00555 1.01E-05" 421.860 0.00555 1.01E-05" 421.960 0.00594 22.139" 422.060 0.00607 45.015" 422.010 0.00594 22.139" 422.010 0.00594 22.139" 422.10 0.1091 68.735" 1. WEIRS" Cerest Weir Crest Left Right" elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" 1. ORIFICES"</pre>	"	0.020 Current peak flow	c.m/sec"			
<pre>" 22.2 Hydrograph volume c.m" 7. Number of stages" 420.801 Minimum water level metre" 422.110 Maximum water level metre" 420.801 Starting water level metre"</pre>	"	0.015 Target outflow c	.m/sec"			
<pre>7. Number of stages"     420.801 Minimum water level metre"     422.110 Maximum water level metre"     422.010 Maximum water level metre"     420.801 Starting water level metre"     0 Keep Design Data: 1 = True; 0 = False"     Level Discharge Volume"     420.801 0.000 0.000"     421.860 0.00555 1.01E-05"     421.910 0.00568 1.244"     421.960 0.00568 1.244"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.00607 45.015"     422.060 0.900 6.000 0.000 0.000"     1. WEIRS"     Crest Weir Crest Left Right"     elevation coefficie breadth sideslope sideslope"     422.060 0.900 6.000 0.000"     1. ORIFICES"     Orifice Orifice Orifice Number of"     invert coeffici diameter orifices"     420.801 0.630 0.0500 1.000"     Peak outflow 0.006 c.m/sec"     Maximum level 421.940 metre"     Maximum storage 4.968 c.m"     Centroidal lag 1.659 hours"     0.012 0.020 0.006 0.000 c.m/sec"     Maximum flow 0.006 c.m/sec"     Maximum flow 0.006 c.m/sec"     Maximum flow 0.006 c.m/sec"     Hydrograph volume 22.151 c.m"     0.012 0.020 0.006     HYDROGRAPH Start - New Tributary"     40     HYDROGRAPH Start - New Tributary" </pre>	"	22.2 Hvdrograph volume	c.m"			
<pre>" 420.801 Minimum water level metre" " 422.110 Maximum water level metre" " 420.801 Starting water level metre" " 0 Keep Design Data: 1 = True; 0 = False" " Level Discharge Volume" " 420.801 0.000 0.000" " 421.860 0.00555 1.01E-05" " 421.910 0.00558 1.244" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.00594 22.139" " 422.060 0.00607 45.015" " 422.010 0.00594 22.139" " 422.060 0.000 6.000 0.000 0.000" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" " 422.060 0.900 6.000 0.000 0.000" " 1. ORIFICES" " Orifice Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.0500 1.000" " Peak outflow 0.006 c.m/sec" " Maximum level 421.940 metre" " Maximum storage 4.968 c.m" " Centroidal lag 1.659 hours" " 0.012 0.020 0.006 0.000 c.m/sec" " 40 HYDROGRAPH Combine 1" " Controlled &amp; Uncontrolled" " Maximum flow 0.006 c.m/sec" " 40 HYDROGRAPH Start - New Tributary"</pre>	"	7. Number of stages"				
<pre>422.110 Maximum water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 Starting water level metre" 420.801 0.006 does a file of the start of the</pre>	"	420.801 Minimum water level	. metre"			
<pre>420.801 Starting water level metre" 0 Keep Design Data: 1 = True; 0 = False" Level Discharge Volume" 420.801 0.000 0.000" 421.860 0.00555 1.01E-05" 421.910 0.00568 1.244" 421.960 0.00694 22.139" 422.010 0.00954 22.139" 422.010 0.00954 22.139" 422.010 0.1091 68.735" 1. WEIRS" Crest Weir Crest Left Right" elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" 1. ORIFICES" Orifice Orifice Orifice Number of" invert coefficie diameter orifices" 420.801 0.630 0.0500 1.000" Peak outflow 0.006 c.m/sec" Maximum level 421.940 metre" Maximum storage 4.968 c.m" Centroidal lag 1.659 hours" 0.012 0.020 0.006 0.000 c.m/sec" 40 HYDROGRAPH Combine 1" 6 Combine " 1. Node #" Controlled &amp; Uncontrolled" Maximum flow 0.006 c.m/sec" Hydrograph volume 22.151 c.m" 0.012 0.020 0.006 0.006" 40 HYDROGRAPH Start - New Tributary"</pre>		422.110 Maximum water level	metre"			
<pre>0 Keep Design Data: 1 = True; 0 = False" Level Discharge Volume"</pre>		420.801 Starting water leve	el metre"			
<ul> <li>Level Discharge Volume"</li> <li>420.801 0.000 0.000"</li> <li>421.860 0.00555 1.01E-05"</li> <li>421.910 0.00568 1.244"</li> <li>421.960 0.00581 7.462"</li> <li>422.010 0.00594 22.139"</li> <li>422.060 0.00607 45.015"</li> <li>422.100 0.1091 68.735"</li> <li>1. WEIRS"</li> <li>Crest Weir Crest Left Right"</li> <li>elevation coefficie breadth sideslope sideslope"</li> <li>422.060 0.900 6.000 0.000 0.000"</li> <li>0.081FICES"</li> <li>Orifice Orifice Orifice Number of"</li> <li>invert coefficie diameter orifices"</li> <li>420.801 0.630 0.0500 1.000"</li> <li>Peak outflow 0.006 c.m/sec"</li> <li>Maximum storage 4.968 c.m"</li> <li>Centroidal lag 1.659 hours"</li> <li>0.012 0.020 0.006 0.000 c.m/sec"</li> <li>40 HYDROGRAPH Combine 1"</li> <li>Controlled &amp; Uncontrolled"</li> <li>Maximum flow 0.006 c.m/sec"</li> <li>Hydrograph volume 22.151 c.m"</li> <li>0.012 0.020 0.006 0.006"</li> <li>40 HYDROGRAPH Start - New Tributary"</li> </ul>		0 Keen Design Data: 1	= True: 0 =	= False"		
<ul> <li>420.801 0.000 0.000"</li> <li>421.860 0.00555 1.01E-05"</li> <li>421.910 0.00568 1.244"</li> <li>421.960 0.00581 7.462"</li> <li>422.010 0.00594 22.139"</li> <li>422.060 0.00607 45.015"</li> <li>422.110 0.1091 68.735"</li> <li>1. WEIRS"</li> <li>Crest Weir Crest Left Right"</li> <li>elevation coefficie breadth sideslope sideslope"</li> <li>422.060 0.900 6.000 0.000 0.000"</li> <li>1. ORIFICES"</li> <li>Orifice Orifice Orifice Number of"</li> <li>invert coefficie diameter orifices"</li> <li>420.801 0.630 0.0500 1.000"</li> <li>Peak outflow 0.006 c.m/sec"</li> <li>Maximum level 421.940 metre"</li> <li>Maximum storage 4.968 c.m"</li> <li>Centroidal lag 1.659 hours"</li> <li>0.012 0.020 0.006 0.000 c.m/sec"</li> <li>Hydrograph volume 22.151 c.m"</li> <li>0.012 0.020 0.006 0.006"</li> <li>40 HYDROGRAPH Start - New Tributary"</li> </ul>		Level Discharge	Volume"			
<pre>" 421.860 0.00555 1.01E-05" " 421.910 0.00568 1.244" " 421.960 0.00594 22.139" " 422.010 0.00594 22.139" " 422.010 0.1091 68.735" " 422.110 0.1091 68.735" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" " 1. ORIFICES" " Orifice Orifice Orifice Number of" " invert coefficie diameter orifices" " 420.801 0.630 0.0500 1.000" " Peak outflow 0.006 c.m/sec" " Maximum level 421.940 metre" " Maximum storage 4.968 c.m" Centroidal lag 1.659 hours" 0.012 0.020 0.006 0.000 c.m/sec" " 40 HYDROGRAPH Combine 1" " Controlled &amp; Uncontrolled" " Maximum flow 0.006 c.m/sec" " Hydrograph volume 22.151 c.m" 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"</pre>		420,801 0,000	0.000"			
<pre>" 421.910 0.00568 1.244" " 421.960 0.00568 1.244" " 422.010 0.00594 22.139" 422.060 0.00607 45.015" 422.110 0.1091 68.735" " 422.110 0.1091 68.735" " 1. WEIRS" " Crest Weir Crest Left Right" " elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" " 1. ORIFICES" " 0rifice Orifice Orifice Number of" " 1. ORIFICES" " 420.801 0.630 0.0500 1.000" " Peak outflow 0.006 c.m/sec" " Maximum level 421.940 metre" " Maximum storage 4.968 c.m" " 0.012 0.020 0.006 0.000 c.m/sec" " 40 HYDROGRAPH Combine 1" " 0.012 0.020 0.006 c.m/sec" " Hydrograph volume 22.151 c.m" " 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"</pre>		421,860 0,00555	1.01E-05"			
<pre>421.960 0.00581 7.462" 422.010 0.00594 22.139" 422.060 0.00607 45.015" 422.110 0.1091 68.735" 1. WEIRS" Crest Weir Crest Left Right" elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" 422.060 0.900 6.000 0.000 0.000" 1. ORIFICES" Orifice Orifice Orifice Number of" invert coefficie diameter orifices" 420.801 0.630 0.0500 1.000" Peak outflow 0.006 c.m/sec" Maximum level 421.940 metre" Maximum storage 4.968 c.m" Centroidal lag 1.659 hours" 0.012 0.020 0.006 0.000 c.m/sec" 40 HYDROGRAPH Combine 1" 6 Combine 1" 6 Controlled &amp; Uncontrolled" Maximum flow 0.006 c.m/sec" Hydrograph volume 22.151 c.m" 0.012 0.020 0.006 0.006" 40 HYDROGRAPH Start - New Tributary"</pre>		421.910 0.00568	1.244"			
<pre>422.010 0.00594 22.139" 422.060 0.00607 45.015" 422.110 0.1091 68.735" 1. WEIRS" Crest Weir Crest Left Right" elevation coefficie breadth sideslope sideslope" 422.060 0.900 6.000 0.000 0.000" 1. ORIFICES" Orifice Orifice Orifice Number of" invert coefficie diameter orifices" 420.801 0.630 0.0500 1.000" Peak outflow 0.006 c.m/sec" Maximum level 421.940 metre" Maximum storage 4.968 c.m" Centroidal lag 1.659 hours" 0.012 0.020 0.006 0.000 c.m/sec" 40 HYDROGRAPH Combine 1" 6 Combine " 1 Node #" Controlled &amp; Uncontrolled" Maximum flow 0.006 c.m/sec" Hydrograph volume 22.151 c.m" 0.012 0.020 0.006 0.006" 40 HYDROGRAPH Start - New Tributary"</pre>		421.960 0.00581	7.462"			
422.060       0.00607       45.015"         422.110       0.1091       68.735"         1.       WEIRS"       Crest       Weir       Crest       Left       Right"         "       Orifice       Orifice       breadth       sideslope       sideslope         "       Orifice       Orifice       Orifice       No00       0.000       "         "       Northold       0.630       0.600       1.000"       "       Naximum level       421.940       metre"         "       Maximum storage       4.968       c.m"       "       0.012       0.020       0.006       0.000       c.m/sec"         "       Maximum storage       1.659       hours"       "       0       0       0       0       0       0       0		422.010 0.00594	22.139"			
422.110       0.1091       68.735"         1.       WEIRS"         Crest       Weir       Crest       Left       Right"         elevation coefficie       breadth sideslope sideslope"         422.060       0.900       6.000       0.000"         "       422.060       0.900       6.000       0.000"         "       0rifice       Orifice       Norifice       Norifices"         "       0rifice       0rifice       Norifices"         "       0.080       0.060       1.000"         "       Peak outflow       0.006       c.m/sec"         "       Maximum level       421.940       metre"         "       Maximum storage       4.968       c.m"         "       0.012       0.020       0.006       0.000 c.m/sec"         "       0.012       0.020       0.006       0.000 c.m/sec"         "       1       Node #"       Controlled & Uncontrolled"         "       Maximum flow       0.006       c.m/sec"         "       Maximum flow       0.006       0.006"         "       0.012       0.020       0.006       0.006"         "       0.012       0		422.060 0.00607	45.015"			
<pre>" 1. WEIRS" "     Crest Weir Crest Left Right"     elevation coefficie breadth sideslope sideslope"     422.060 0.900 6.000 0.000 0.000" "    1. ORIFICES" "    Orifice Orifice Orifice Number of" "    invert coefficie diameter orifices" "    420.801 0.630 0.0500 1.000" "    Peak outflow 0.006 c.m/sec" "    Maximum level 421.940 metre" "    Maximum storage 4.968 c.m" "    Centroidal lag 1.659 hours" "    0.012 0.020 0.006 0.000 c.m/sec" "    40 HYDROGRAPH Combine 1" "</pre>		422,110 0,1091	68.735"			
"       Crest       Weir       Crest       Left       Right"         "       elevation coefficie       breadth sideslope sideslope"         "       422.060       0.900       6.000       0.000       0.000"         "       1.       ORIFICES"       Orifice       Orifice       Orifice Number of"         "       0rifice       Orifice       diameter       orifices"         "       420.801       0.630       0.0500       1.000"         "       420.801       0.630       0.006       c.m/sec"         "       420.801       0.630       0.0500       1.000"         "       Peak outflow       0.006       c.m/sec"         "       Maximum level       421.940       metre"         "       Maximum storage       4.968       c.m"         "       Maximum storage       4.968       c.m"         "       0.012       0.020       0.006       0.000 c.m/sec"         "       0.012       0.020       0.006       c.m/sec"         "       1       Node #"       Controlled & Uncontrolled"       Maximum flow       0.006       c.m/sec"         "       Maximum flow       0.020       0.006 <td></td> <td>1. WETRS"</td> <td>001/00</td> <td></td> <td></td> <td></td>		1. WETRS"	001/00			
<pre>elevation coefficie breadth sideslope sideslope"     422.060 0.900 6.000 0.000 0.000"     1. ORIFICES"     Orifice Orifice Orifice Number of"     invert coefficie diameter orifices"     420.801 0.630 0.0500 1.000"     Peak outflow 0.006 c.m/sec"     Maximum level 421.940 metre"     Maximum storage 4.968 c.m"     Centroidal lag 1.659 hours"     0.012 0.020 0.006 0.000 c.m/sec"     40 HYDROGRAPH Combine 1"     Controlled &amp; Uncontrolled"     Maximum flow 0.006 c.m/sec"     Hydrograph volume 22.151 c.m"     0.012 0.020 0.006 0.006"     HYDROGRAPH Start - New Tributary"</pre>		Crest Weir	Crest	left	Right"	
422.060       0.900       6.000       0.000       0.000"         "       1. ORIFICES"       0rifice       Orifice Number of"         "       invert coefficie       diameter       orifices"         "       420.801       0.630       0.000"         "       Peak outflow       0.006       c.m/sec"         "       Maximum level       421.940       metre"         "       Maximum storage       4.968       c.m"         "       Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000 c.m/sec"         "       40       HYDROGRAPH       Combine       1"         "       6       Combine       1"       0.006       c.m/sec"         "       0.012       0.020       0.006       c.m/sec"         "       1       Node #"       Controlled & Uncontrolled"       "         "       0.012       0.020       0.006       0.006"         "       0.012       0.020       0.006       0.006"         "       40       HYDROGRAPH Start - New Tributary"       "		elevation coefficie	breadth sid	deslone si	deslone"	
1. ORIFICES"         Image: Orifice Orifice Orifice Number of"         Image: Im		422.060 0.900	6.000	0.000	0.000"	
Orifice       Orifice       Orifice Number of"         invert coefficie       diameter       orifices"         420.801       0.630       0.0500       1.000"         Peak outflow       0.006       c.m/sec"         Maximum level       421.940       metre"         Maximum storage       4.968       c.m"         Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000 c.m/sec"         "40       HYDROGRAPH       Combine       1"         6       Combine       1"       6       Controlled & Uncontrolled"         "Maximum flow       0.006       c.m/sec"       1         "40       HYDROGRAPH       Start - New Tributary"		1. ORTETCES"	0.000	0.000	0.000	
invert coefficie       diameter       orifices"         420.801       0.630       0.0500       1.000"         Peak outflow       0.006       c.m/sec"         Maximum level       421.940       metre"         Maximum storage       4.968       c.m"         Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000 c.m/sec"         40       HYDROGRAPH       Combine       1"         6       Combine       1"       6       Combine         "       0.012       0.006       c.m/sec"         "40       HYDROGRAPH       Combine       1"         Maximum flow       0.006       c.m/sec"         "Hydrograph volume       22.151       c.m"         0.012       0.020       0.006       0.006"         "40       HYDROGRAPH Start - New Tributary"       40		Orifice Orifice	Orifice Nur	mber of"		
420.801       0.630       0.0500       1.000"         Peak outflow       0.006       c.m/sec"         Maximum level       421.940       metre"         Maximum storage       4.968       c.m"         Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000 c.m/sec"         '' 40       HYDROGRAPH       Combine       1"         '' 6       Combine       1"       6         '' 1       Node #"       ''       Ontrolled & Uncontrolled"         '' Maximum flow       0.006       c.m/sec"         '' 40       Hydrograph volume       22.151       c.m"         '' 40       HYDROGRAPH Start - New Tributary"       ''		invert coefficie	diameter o	rifices"		
"Peak outflow       0.006       c.m/sec"         "Maximum level       421.940       metre"         "Maximum storage       4.968       c.m"         "Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000         "Maximum storage       1.659       hours"         "Maximum flow       0.006       0.000         "Maximum flow       0.006       c.m/sec"         "Maximum flow       0.006       c.m/sec"         "Maximum flow       0.006       c.m/sec"         "Maximum flow       0.006       0.006"         "Maximum flow       0.012       0.020         "Maximum flow       0.006       0.006"         "Maximum flow       0.020       0.006         "Maximum flow       0.012       0.020         "Maximum flow       0.006       0.006"         "Maximum flow       0.020       0.006         "Maximum flow       0.020       0.006         "Maximum flow       0.020       0.006"         "Maximum flow       0.020       0.006"         "Maximum flow       0.020       0.006"         "Maximum flow       0.020       0.006"		420,801 0,630	0.0500	1.000"		
"Maximum level       421.940 metre"         "Maximum storage       4.968 c.m"         "Centroidal lag       1.659 hours"         0.012       0.020       0.006       0.000 c.m/sec"         "40       HYDROGRAPH       Combine       1"         "Gontrolled & Uncontrolled"       "Gontrolled & Uncontrolled"         "Maximum flow       0.006       c.m/sec"         "Hydrograph volume       22.151       c.m"         "Gont2       0.020       0.006       0.006"		Peak outflow	0.00	26 c.m/	sec"	
"Maximum storage       4.968       c.m"         "Centroidal lag       1.659       hours"         0.012       0.020       0.006       0.000       c.m/sec"         "40       HYDROGRAPH       Combine       1"         "6       Combine       1"       6       Combine         "10       Node #"       Controlled & Uncontrolled"       0.006       c.m/sec"         "Maximum flow       0.006       c.m/sec"       0.012       0.020       0.006       0.006"         "40       HYDROGRAPH Start - New Tributary"       0.006       0.006"       0.006"       1.0006"		Maximum level	421.94	40 metr	e"	
"       Centroidal lag       1.659 hours"         "       0.012       0.020       0.006       0.000 c.m/sec"         "       40       HYDROGRAPH       Combine       1"         "       6       Combine       1"         "       1       Node #"       Controlled & Uncontrolled"         "       Maximum flow       0.006       c.m/sec"         "       Hydrograph volume       22.151       c.m"         "       0.012       0.020       0.006       0.006"         "       40       HYDROGRAPH Start - New Tributary"       "       "		Maximum storage	4.96	58 c.m"	-	
"       0.012       0.020       0.006       0.000 c.m/sec"         "       HYDROGRAPH       Combine       1"         "       6       Combine       1"         "       1       Node #"       "         "       1       Node #"       "         "       Controlled & Uncontrolled"       "         "       Maximum flow       0.006       c.m/sec"         "       Hydrograph volume       22.151       c.m"         "       0.012       0.020       0.006       0.006"         "       40       HYDROGRAPH Start - New Tributary"       "		Centroidal lag	1.6	59 hours		
<pre>" 40 HYDROGRAPH Combine 1" " 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled" " Maximum flow 0.006 c.m/sec" " Hydrograph volume 22.151 c.m" " 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"</pre>		0.012 0.020	9,996	0.000 C	m/sec"	
<pre>" 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled" " Maximum flow 0.006 c.m/sec" " Hydrograph volume 22.151 c.m" " 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"</pre>		40 HYDROGRAPH Combine	1"	0.000 0.	, 500	
"       1       Node #"         "       Controlled & Uncontrolled"         "       Maximum flow       0.006       c.m/sec"         "       Hydrograph volume       22.151       c.m"         "       0.012       0.020       0.006       0.006"         "       40       HYDROGRAPH Start - New Tributary"		6 Combine "	-			
"Controlled & Uncontrolled"         "Maximum flow       0.006 c.m/sec"         "Hydrograph volume       22.151 c.m"         "0.012       0.020       0.006         "40       HYDROGRAPH Start - New Tributary"		1 Node #"				
"Maximum flow       0.006       c.m/sec"         "Hydrograph volume       22.151       c.m"         "0.012       0.020       0.006       0.006"         "40       HYDROGRAPH Start - New Tributary"		Controlled & Uncont	rolled"			
"Hydrograph volume       22.151       c.m"         "0.012       0.020       0.006       0.006"         "40       HYDROGRAPH Start - New Tributary"		Maximum flow	011CG 0 00	26 c.m/	sec"	
" 0.012 0.020 0.006 0.006" " 40 HYDROGRAPH Start - New Tributary"		Hydrogranh volume	22.00	51 cm"		
" 40 HYDROGRAPH Start - New Tributary"		0,012 0.02	0 0.006	A. AAA		
		40 HYDROGRAPH Start - New	Tributary"	0.000		
" 2 Start - New Tributary"		2 Start - New Tributa	arv"			
		0.012 0.00	0 0.006	0.006		
		0.012 0.00	000.000	0.000		
"	33 C.	ATCHMENT 203"				
--------	--------	---------------------------------	-----------------	---------------------	------------	--------------
"	1	Triangular SCS"				
"	1	Equal length"				
"	1	SCS method"				
"	203	Uncontrolled Area'				
"	16.800	% Impervious"				
"	0.036	Total Area"				
"	3.100	Flow length"				
"	6.000	Overland Slope"				
"	0.030	Pervious Area"				
"	3.100	Pervious length"				
"	6.000	Pervious slope"				
"	0.006	Impervious Area"				
"	3.100	Impervious length'	ı			
"	6.000	Impervious slope"				
"	0.250	Pervious Manning	'n'"			
	75.000	Pervious SCS Curve	No."			
	0.155	Pervious Runoff co	pefficient"			
	0.100	Pervious Ta/S coef	ficient"			
	8.467	Pervious Initial a	abstraction"			
	0.015	Impervious Manning	y 'n'"			
	98 000	Impervious SCS Cur	rve No "			
	0 762	Impervious Bunoff	coefficient"			
	0.702	Impervious Ta/S co	efficient"			
	0.100	Impervious Initial	l abstraction			
	0.510			9 996	c m/sec"	
	C	atchment 203	Pervious	Impervious	Total Area	
		urface Area	0 030	a aas		hectare"
	т	ime of concentration	5 020	0.000	2 712	minutes"
	T	ime to Controid	11/ 22/	0.554	103 067	minutes
	P	ainfall denth	21 206	31 306	21 206	mm"
	P	aintaii depth	9 10	1 00	11 30	 
	P	aintall lossos	26 544	7 472	22 240	C.III mm"
		upoff dopth	20.J44 1 952	7.472	23.340	
		unoff volumo	4.052	23.924 1 /E	2.00	
		unoff coofficient	1.45 0.155	1.45	2.90	C.III "
	м	anori coerricienc	0.133	0.702	0.237	c
	40 U	AXIMUM TIOW	C "	0.002	0.002	c.m/sec
	40 H	YDROGRAPH Add Runoth	Γ			
	4			0.000		
	40		002 0.000	0.006		
	40 H	YDROGRAPH COPY to ou	JUTIOW			
	8	Copy to Outflow		0.000		
	40		1	0.006		
	40 H	YDROGRAPH Combine	T			
	6	Combine				
	1	NODE #"				
		controlled & Uncor	itrolled.	aa (	11	
		avimum fla	~ ~ ~		o c ··	
" "	M	aximum flow	0.0	08 C.m/S	ec	
" "	M H	aximum flow ydrograph volume	0.0 25.0	08 c.m/s 51 c.m"	ec	

"	40	HYDF	Rograph	Confluence	1"		
"		7 (	Confluenc	e "			
"		1 1	lode #"				
"		(	Controlle	d & Uncontro	olled"		
"		Maxi	imum flow		0.008	c.m/sec"	
"		Hydr	rograph v	olume	25.051	c.m"	
"		-	0.00	2 0.008	0.002	0.000"	
"	40	HYDF	ROGRAPH C	opy to Outfl	.ow"		
"		8 (	Copy to O	utflow"			
"			0.00	2 0.008	0.008	0.000"	
"	38	STAF	RT/RE-STA	RT TOTALS 1"			
"		3 F	Runoff To	tals on EXIT	• 11		
"		Tota	al Catchm	ent area		0.148	hectare"
"		Tota	al Imperv	ious area		0.088	hectare"
"		Tota	al % impe	rvious		59.168"	
"	19	EXI	Γ".				

"			MIDUSS Output		·>"
"			MIDUSS version		Version 2.25 rev. 473"
"			MIDUSS created		Sunday, February 7, 2010"
"		10	Units used:		ie METRIC"
"			Job folder:		Q:\54925\100\SWM\5-Year-Post"
"			Output filename:		5-Year-Post-new.out"
"			Licensee name:		Α"
"			Company		
"			Date & Time last used:		5/23/2024 at 1:57:22 PM"
п	31	TI	ME PARAMETERS"		
"		5.000	Time Step"		
"		180.000	Max. Storm length"		
"		1500.000	Max. Hydrograph"		
	32	ST	ORM Chicago storm"		
	22	1	Chicago storm"		
п		500,000	Coefficient A"		
		0 240	Constant B"		
п		0.240	Exponent C"		
		0.000	Exponence C Eraction B"		
		180 000	Duration"		
п		1 000	Time step multipliep"		
п		1.000 Ma	vinum intensity	150 082	mm/ho"
п		Та	tal denth	12 070	mm"
п		6	005byd Hydrograph exten	42.079	""" I in this file"
	22			SION USEC	
	22	۲ 1	Triangulan SCS"		
		1	Faual longth"		
		1	Equal teligin		
		1 201	Scs method		
		100 000	« Transmissions"		
		100.000	% Impervious		
		15 000	IOLAI Area		
		10.000	FIOW TENGEN		
		10.000	Oversand Stope		
		0.000	Pervious Area		
		15.000	Pervious length		
		10.000	Pervious slope		
		0.032	Impervious Area		
		15.000	Impervious length		
		10.000	Impervious slope"		
		0.250	Pervious Manning 'n'"		
		/5.000	Pervious SCS Curve No."		
		0.000	Pervious Runott coetticie	nt"	
		0.100	Pervious la/S coefficient	• •	
		8.46/	Pervious Initial abstract	100"	
		0.015	Impervious Manning 'n'"		
		98.000	Impervious SCS Curve No."	• . •	
		0.836	Impervious Runott coeffic	ient"	
		0.100	Impervious Ia/S coetticie	nt"	
		0.518	Impervious Initial abstra	ction"	<i>/</i>
"			0.011 0.000	0.000	0.000 c.m/sec"

"		Catchme	nt 201		Pervious		Impervious	Total Are	a "
"		Surface	Area		0.000		0.032	0.032	hectare"
"		Time of	concentra	ation	7.849		0.766	0.766	minutes"
"		Time to	Centroid		116.069		90.481	90.481	minutes"
"		Rainfal	l depth		42.079		42.079	42.079	mm"
"		Rainfal	l volume		0.00		13.47	13.47	c.m"
"		Rainfal	l losses		32.551		6.896	6.896	mm"
"		Runoff	depth		9.528		35.183	35.183	mm"
"		Runoff	volume		0.00		11.26	11.26	c.m"
"		Runoff	coefficie	nt	0.000		0.836	0.836	н
"		Maximum	flow		0.000		0.011	0.011	c.m/sec"
"	40	HYDROGR	APH Add Ru	unoff '	ı				
"	4	1 Add	Runoff "						
"			0.011	0.011	L 0.0	00	0.000"		
"	40	HYDROGR	APH Copy †	to Outi	Flow"				
"	:	3 Сору	to Outflo	ow"					
"			0.011	0.011	L 0.0	11	0.000"		
"	40	HYDROGR	APH Next 1	link "					
"	!	5 Next	link "						
"			0.011	0.011	L 0.0	11	0.000"		
"	33	CATCHME	NT 202"						
"	:	L Tria	ngular SCS	5"					
"	:	L Equa	l length"						
"	:	L SCS I	method"						
"	202	2 Cont	rolled Are	ea"					
"	61.90	) % Im	pervious"						
"	0.08	) Tota	l Area"						
"	12.30	ð Flow	length"						
"	3.30	0 Over	land Slope	e"					
"	0.03	9 Perv	ious Area'	1					
"	12.30	9 Perv	ious leng	th"					
	3.30	9 Perv	ious slope	2"					
	0.05	) Impe	rvious Are	ea"					
"	12.30	) Impe	rvious le	ngth"					
	3.30	) Impe	rvious slo	ope"					
	0.25	9 Perv	ious Mann:	ing 'n'					
	75.00	) Perv	ious SCS (	Curve N	No."				
	0.220	5 Perv	ious Runo	ff coef	fficient"				
	0.10	) Perv	ious Ia/S	coeffi	icient"				
	8.46	7 Perv	ious Init:	ial abs	straction	••			
	0.01	5 Impe	rvious Mar	nning	'n'"				
	98.00	) Impe	rvious SCS	S Curve	≥ No."				
	0.84	3 Impe	rvious Run	nott co	petticien	t"			
	0.10	) Impe	rvious Ia,	/S coel	Hicient"				
	0.51	3 Impe	rvious In:	itial a	abstracti	on"		<i>,</i>	
		<u> </u>	0.018	0.011	L 0.0	11	0.000 0	.m/sec"	
		Catchme	nt 202		Pervious		Impervious	IOTAL Are	a "
		Surtace	Area	<b></b>	0.030		0.050	0.080	nectare"
		iime of	concentra	ation	9./18		0.948	2.190	minutes"
		lime to	Centroid		118.692		90.295	94.315	minutes"

"	Rainfall depth	42.079	42.079	42.079	mm"
"	Rainfall volume	12.83	20.84	33.66	c.m"
"	Rainfall losses	32.580	6.623	16.512	mm"
"	Runoff depth	9.499	35.456	25.567	mm"
"	Runoff volume	2.90	17.56	20.45	c.m"
"	Runoff coefficient	0.226	0.843	0.608	н
"	Maximum flow	0.001	0.017	0.018	c.m/sec"
"	40 HYDROGRAPH Add Runoff	"			
"	4 Add Runoff "				
"	0.018 0.02	9 0.011	0.000"		
"	54 POND DESIGN"				
	0.029 Current peak flow	c.m/sec"			
"	0.015 Target outflow c	.m/sec"			
"	31.7 Hydrograph volume	C.m"			
	7. Number of stages"	C T III			
	420.801 Minimum water level	metre"			
п	422 110 Maximum water level	metre"			
	422.110 Haximum water level	1 metre"			
	420.001 Starting watch itve	$= True \cdot 0 =$	- False"		
	Level Discharge	Volume"	- 10150		
	120 801 0 000	0 000"			
	420.801 0.000	1 01E_05"			
	421.800 0.00555	1 244"			
	421.910 0.00908	1.244 7.462"			
		7.40Z			
	422.010 0.00594	22.139			
	422.000 0.00007				
	422.110 0.1091	68./35			
	I. WEIRS	<b>c</b> ,		<b>D</b> • • • • •	
	Crest Weir	Crest	Lett	Right	
	elevation coefficie	breadth sid	deslope side	estope"	
	422.060 0.900	6.000	0.000	0.000"	
	1. ORIFICES				
	Orifice Orifice	Orifice Nur	mber ot"		
	invert coefficie	diameter or	ritices"		
	420.801 0.630	0.0500	1.000"		
	Peak outflow	0.00	06 c.m/se	ec"	
	Maximum level	421.96	55 metre'	•	
"	Maximum storage	8.80	02 c.m"		
"	Centroidal lag	1.73	38 hours"		
"	0.018 0.029	0.006	0.000 c.m,	/sec"	
"	40 HYDROGRAPH Combine	1"			
"	6 Combine "				
"	1 Node #"				
"	Controlled & Uncont	rolled"			
"	Maximum flow	0.00	06 c.m/se	ec"	
"	Hydrograph volume	31.84	44 c.m"		
"	0.018 0.02	9 0.006	0.006"		
"	40 HYDROGRAPH Start - New	Tributary"			
"	2 Start - New Tributa	ry"			
"	0.018 0.00	0 0.006	0.006"		

<pre>" 1 Triangular SCS" " 1 Equal length" " 203 Uncontrolled Area" " 203 Uncontrolled Area" " 203 Uncontrolled Area" " 3.100 Flow length" " 6.036 Total Area" " 3.100 Flow length" " 6.030 Pervious length" " 6.030 Pervious length" " 6.046 Impervious length" " 6.060 Impervious length" " 6.060 Impervious Area" " 3.100 Impervious length" " 6.060 Impervious length" " 6.060 Impervious Stope" " 6.250 Pervious Manning 'n'" " 75.060 Pervious Stope" " 6.22 Pervious Runoff coefficient" " 6.100 Pervious Initial abstraction" " 6.101 Impervious Sto Curve No." " 6.22 Pervious Nunoff coefficient" " 6.102 Pervious Initial abstraction" " 6.083 0.006 0.006 c.m/sec" " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Jalo's coefficient" " 0.108 Impervious Sto Curve No." " 6.787 Impervious Sto Curve No." " 6.787 Impervious Jalo's coefficient" " 0.083 0.006 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.006 hectare' " Time of concentration 3.553 0.347 2.215 minutes' " Aainfall depth 42.079 42.079 42.079 mm" " Rainfall losses 32.739 8.972 28.746 mm" " Runoff dopth 9.340 33.107 13.333 mm" " Runoff coefficient 0.222 0.787 0.317 " " Maximum flow 0.002 0.002 0.003 c.m/sec" " 40 HYDRORAPH Add Runoff " " 4 Add Runoff " " 40 HYDRORAPH Add Runoff " " 40 HYDRORAPH Copy to Outflow" " 6 0.006 0.006 " " 40 HYDRORAPH Combine 1" " 6 0006 0.006 " " 40 HYDRORAPH Combine 1" " 6 Combine " " 40 HYDRORAPH Combine 1" " 6 Combine " " 40 HYDRORAPH Combine 1" " 6 Combine " " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combine 1" " 40 HYDRORAPH Combi</pre>	<pre>" 1 Triangular SCS" " 1 Equal length" " 203 Uncontrolled Area" " 203 Uncontrolled Area" " 203 Uncontrolled Area" " 3.100 Flow length" " 6.000 Overland Slope" " 6.036 Total Area" " 3.100 Pervious length" " 6.000 Pervious slope" " 6.000 Impervious length" " 6.000 Impervious length" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Pervious Slope" " 6.000 Impervious Slope" " 6.000 Pervious Slope" " 6.001 Pervious Slope" " 6.000 Pervious Slope" " 6.001 Pervious Slope" " 6.003 Over Pervious Impervious Total Area " 8.007 Impervious Initial abstraction" " 6.003 0.000 0.006 0.006 0.006 hectare" " 5.000 Figuration Slope" " Catchmert 203 Pervious Impervious Total Area " Surface Area 0.030 0.006 0.006 hectare" " Time of concentration 3.553 0.347 2.215 minutes" " Time of concentration 3.553 0.347 2.215 minutes" " Time of concentration 3.553 0.347 2.215 minutes" " Time of concentration 3.553 0.347 2.215 minutes" " Rainfall volume 12.60 2.54 15.15 c.cm" " Rainfall volume 12.60 2.54 15.15 c.cm" " Rainfall losses 32.739 8.972 28.746 mm" " Runoff volume 2.80 2.00 4.80 c.m" " Maximum flow 0.002 0.002 0.003 c.m/sec" " 0.003 0.006" " 40 HYDROGRAPH Add Runoff " " 0.003 0.006 0.006" " 40 HYDROGRAPH Add Runoff " " 0.003 0.006 0.006" " 40 HYDROGRAPH Combine 1" " 0.003 0.006 0.006" " 40 HYDROGRAPH Combine 1" " 0.003 0.006 0.006" " 40 HYDROGRAPH Combine 1" " 0.008 0.003 0.006" " 40 HYDROGRAPH Combine 1" " 0.008 0.003 0.0006" " 40 HYDROGRAPH Add Runoff " " 0.008</pre>	"	33 C/	ATCHMENT 203"					
<pre> 1 Equal length" 2 SCS method" 2 Uncontrolled Area" 2 Uncontrolled Area" 2 Uncontrolled Area" 3 Uncontrolled Area" 3 Uncontrolled Area" 4 Add Runoff " 4 HYDROGRAPH Combine 1" 4 Add Runoff " 4 HYDROGRAPH Combine 1" 4 Add Runoff " 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 4 HYDROGRAPH Combine 1" 4 Add Runoff 1 4 4 HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 HYDROGRAPH Combine 1" 4 Add HYDROGRAPH Combine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRAPH COmbine 1" 4 HYDROGRA</pre>	<pre>" 1 Equal length"     1 SCS method"     203 Uncontrolled Area"     203 Uncontrolled Area"     3.100 Flow length"     6.000 Overland Slope"     0.030 Pervious Area"     3.100 Flow length"     6.000 Pervious length"     6.000 Impervious length"     6.000 Impervious length"     6.000 Impervious length"     6.000 Pervious Area"     3.100 Impervious length"     6.000 Pervious Area"     3.100 Impervious length"     6.000 Pervious Area"     3.100 Impervious length"     6.0250 Pervious Area"     6.250 Pervious Runoff coefficient"     6.250 Pervious Nanning 'n'"     75.000 Pervious Runoff coefficient"     6.100 Pervious Infitial abstraction"     6.101 Impervious SCS Curve No."     6.251 Impervious Runoff coefficient"     6.100 Impervious SCS Curve No."     6.77 Impervious Runoff coefficient"     6.101 Impervious SCS Curve No."     6.787 Impervious Runoff coefficient"     6.108 Impervious Ia/S coefficient"     6.109 Impervious Ia/S coefficient"     6.109 Impervious Ia/S coefficient"     6.109 Impervious Ia/S coefficient"     6.083 0.000 0.006 0.006 c.m/sec"     Catchment 203 Pervious Impervious Total Area "     Surface Area 0.030 0.006 0.036 hectare"     Time to Centroid 110.320 89.897 101.800 minutes"     Rainfall depth 42.079 42.079 42.079 mm"     Rainfall lopth 42.079 42.079 42.079     mm"     Rainfall volume 12.60 2.54 15.15 c.m"     Rainfall lopth 42.079 42.079 42.079     mm"     Runoff depth 9.340 33.107 13.33 mm"     Runoff volume 2.80 2.00 4.80 c.m"     Runoff volume 2.80 2.00 4.80 c.m"     Runoff coefficient 0.222 0.787 0.317 "     Maximum flow 0.002 0.002 0.003 c.m/sec"     40 HYDROGRAPH Ad Runoff "     0.003 0.006 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.006 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.006 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.003 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.003 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.003 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.003 0.006"     HVDROGRAPH Ad Runoff "     0.003 0.003 0.0006"     HVDROGRAPH Ad Runoff "     0.003 0.0</pre>	"	1	Triangular SCS"					
<pre>" 1 SCS method" " 203 Uncontrolled Area" " 16.800 % Impervious" " 0.036 Total Area" " 3.100 Flow length" " 6.000 Overland Slope" " 0.030 Pervious Area" " 3.100 Pervious length" " 6.000 Pervious Slope" " 0.066 Impervious Area" " 3.100 Impervious length" " 6.000 Pervious Slope" " 0.250 Pervious Manning 'n'" " 0.222 Pervious Runoff coefficient" " 0.100 Pervious SCS Curve No." " 0.222 Pervious Runoff coefficient" " 0.100 Pervious Initial abstraction" " 0.101 Impervious SCS Curve No." " 0.251 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.787 Impervious Manning 'n' " 98.000 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.788 Impervious Initial abstraction" " 0.003 0.000 0.006 0.006 c.m/sec" " Surface Area 0.030 0.006 0.006 hectare' " Surface Area 0.030 0.006 0.006 hectare' " Surface Area 0.030 0.006 0.006 minutes' " Time of concentration 3.553 0.347 2.215 minutes' " Time of concentration 3.553 0.347 2.215 minutes' " Rainfall depth 42.079 42.079 mm" " Rainfall depth 42.079 42.079 mm" " Rainfall depth 9.340 33.107 13.333 mm" " Runoff coefficient 42.000 4.80 c.m' " Moximum flow 0.002 0.002 0.003 c.m/sec'" " 40 HYDROGRAPH Add Runoff " " 0.003 0.003 0.006 0.006" " 40 HYDROGRAPH Add Runoff " " 0.003 0.003 0.006" " 40 HYDROGRAPH Combine 1" " 6 Combine "</pre>	<pre> 1 SCS method" 203 Uncontrolled Area" 16.800 % Impervious" 6.000 Verland Slope" 6.030 Pervious Area" 3.100 Pervious lope" 6.000 Pervious slope" 6.000 Impervious length" 6.000 Impervious length" 6.000 Impervious slope" 6.000 Pervious Slope" 7.0.250 Pervious Super" 7.0.020 Pervious Runoff coefficient" 7.0.000 Pervious Sco Curve No." 7.0.021 Pervious Initial abstraction 7.0.015 Impervious Gurye No." 7.0.022 Pervious Sunoff coefficient" 7.0.000 Impervious Slopeficient" 7.0.015 Impervious Sco Curve No." 7.0.727 Impervious Sunoff coefficient" 7.0.000 Impervious SCS Curve No." 7.0.737 Impervious Sunoff coefficient" 7.0.000 Impervious SCS Curve No." 7.0.787 Impervious Sunoff coefficient" 7.0.000 0.000 0.006 0.006 c.m/sec" 7.0.787 Impervious SCS Curve No." 7.0.787 Impervious SCS Curve No." 7.0.787 Impervious Sunoff coefficient" 7.0.000 0.000 0.006 0.006 c.m/sec" 7.0.030 0.000 0.006 0.006 c.m/sec" 7.0.030 0.000 0.006 0.006 c.m/sec" 7.0.030 0.000 0.006 0.006 c.m/sec" 7.0.030 0.000 0.006 0.006 c.m/sec" 7.0.030 0.000 0.006 0.036 hectare" 7.0.031 0.001 0.002 0.003 0.000 0.006 0.036 hectare" 7.0.032 0.002 0.003 0.006 0.036 hectare" 7.0.011 10.320 89.897 101.800 minutes" 7.1me to Centroid 110.320 89.897 101.800 minutes" 7.1me to Centroid 110.320 89.897 101.800 minutes" 7.1me to Centroid 110.320 89.72 28.746 mm" 7.1me to Centroid 110.320 89.72 28.746 mm" 7.0.015 Volume 2.80 2.00 4.80 c.m" 7.0.003 0.003 0.002 0.003 c.m/sec" 7.0.003 0.003 0.000 0.006 7.003 0.003 0.000 0.003 7.0.0317 " 7.0.003 0.003 0.000 0.006" 7.0 HYDROGRAPH Add Runoff 7.1 7.0.003 0.003 0.003 0.006 7.0.003 7.0.</pre>	"	1	Equal length"					
<ul> <li>283 Uncontrolled Area"</li> <li>16.800 % Impervious"</li> <li>0.035 Total Area"</li> <li>3.100 Flow length"</li> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Pervious Slope"</li> <li>0.066 Impervious Area"</li> <li>3.100 Impervious length"</li> <li>6.000 Impervious Slope"</li> <li>0.250 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.425 Pervious Runoff coefficient"</li> <li>0.425 Pervious Runoff coefficient"</li> <li>0.425 Pervious Runoff coefficient"</li> <li>0.457 Pervious Runoff coefficient"</li> <li>0.457 Pervious Runoff coefficient"</li> <li>0.457 Pervious Runoff coefficient"</li> <li>0.457 Pervious Runoff coefficient"</li> <li>0.465 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.469 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient"</li> <li>0.460 Impervious Runoff coefficient</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.403 0.4004 0.4002 0.403 c.m/sec'</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4.4 Add Runoff "</li> <li>4.4 Add Runoff "</li> <li>4.4 Add Runoff "<td><pre>" 283 Uncontrolled Area" " 16.800 % Impervious" 0.036 Total Area" " 3.100 Flow length" " 6.000 Vervious Slope" " 0.030 Pervious length" " 6.000 Pervious lope" " 0.086 Impervious Area" " 3.100 Impervious lope" " 0.086 Impervious Slope" " 0.086 Pervious slope" " 0.086 Pervious Slope" " 0.250 Pervious Slope" " 0.250 Pervious Slope" " 0.220 Pervious Slope" " 0.250 Pervious Slope" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.351 Impervious SCS Curve No." " 0.220 Pervious Manning 'n'" " 0.400 Impervious SCS Curve No." " 0.757 Impervious Sunoff coefficient" " 0.100 Impervious SCS Curve No." " 0.787 Impervious Nunoff coefficient" " 0.101 Impervious SCS Curve No." " 0.787 Impervious Sunoff coefficient" " 0.103 Impervious Sunoff coefficient" " 0.103 Impervious Ja/S coefficient" " 0.104 Impervious Ja/S coefficient" " 0.105 Impervious Ja/S coefficient" " 0.105 Impervious Ja/S coefficient" " 0.108 Impervious Ja/S coefficient" " 0.109 Impervious Ja/S coefficient" " 0.109 Impervious Ja/S coefficient" " 0.101 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.104 Impervious Ja/S 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" 6.000 Pervious lope" " 0.086 Impervious Area" " 3.100 Impervious lope" " 0.086 Impervious Slope" " 0.086 Pervious slope" " 0.086 Pervious Slope" " 0.250 Pervious Slope" " 0.250 Pervious Slope" " 0.220 Pervious Slope" " 0.250 Pervious Slope" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.351 Impervious SCS Curve No." " 0.220 Pervious Manning 'n'" " 0.400 Impervious SCS Curve No." " 0.757 Impervious Sunoff coefficient" " 0.100 Impervious SCS Curve No." " 0.787 Impervious Nunoff coefficient" " 0.101 Impervious SCS Curve No." " 0.787 Impervious Sunoff coefficient" " 0.103 Impervious Sunoff coefficient" " 0.103 Impervious Ja/S coefficient" " 0.104 Impervious Ja/S coefficient" " 0.105 Impervious Ja/S coefficient" " 0.105 Impervious Ja/S coefficient" " 0.108 Impervious Ja/S coefficient" " 0.109 Impervious Ja/S coefficient" " 0.109 Impervious Ja/S coefficient" " 0.101 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.103 Impervious Ja/S coefficient" " 0.104 Impervious Ja/S coefficient" " 0.104 Impervious Ja/S coefficient" " 0.105 Impervious Ja/S coefficient" " 0.106 Impervious Ja/S coefficient" " 0.106 Impervious Ja/S coefficient" " 0.108 Impervious Ja/S coefficient" " 0.003 0.006 0.006 0.006 c.m/sec" " Time of concentration 3.553 0.347 2.215 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Time to Centroid 110.320 89.897 101.800 c.m" " Runoff colume 2.80 2.00 4.80 c.m" " Runoff colume 2.80 2.00 4.80 c.m" " Runoff colume 2.80 2.00 4.80 c.m" " Runoff colume 2.80 2.00 4.800 c.m' " 0.003 0.003 0.006 0.006" " 40 HYDROGRAPH Add Runoff " " 0.003 0.003 0.</pre>	"	1	SCS method"					
<pre>16.800 % Impervious"</pre>	16.800       % Impervious"         9.036       Total Area"         3.100       Flow length"         6.000       Overland Slope"         9.030       Pervious Area"         3.100       Pervious slope"         9.0606       Impervious length"         6.000       Impervious Slope"         0.250       Pervious Runoff coefficient"         0.100       Pervious Slope Scourve No."         0.121       Pervious Initial abstraction"         0.102       Impervious SCS Curve No."         9.8000       Impervious Scoefficient"         0.101       Impervious Initial abstraction"         0.181       Impervious Initial abstraction"         0.083       0.000       0.006       0.006 c.m/sec"         "       Catchment 203       Pervious Impervious Impervious Impervious Impervious Impervious Impervious Impervious Impervious Scoefficient"         "       Surface Area       0.030       0.006       0.006 c.m/sec"         "       Time of concentration 3.553       0.347       2.15       minutes"	"	203	Uncontrolled Are	a"				
<ul> <li>0.036 Total Area"</li> <li>3.100 Flow length"</li> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Impervious length"</li> <li>6.000 Impervious length"</li> <li>6.000 Impervious length"</li> <li>75.000 Pervious Slope"</li> <li>0.250 Pervious Manning 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>8.467 Pervious Initial abstraction"</li> <li>0.015 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious SCS Curve No."</li> <li>9.8.000 Impervious Runoff coefficient"</li> <li>9.111 abstraction"</li> <li>0.100 Impervious Ia/S coefficient"</li> <li>0.111 abstraction"</li> <li>0.003 0.000 0.006 0.006 0.006 c.m/sec"</li> <li>3.1107 Impervious Impervious Total Area "</li> <li>Rainfall depth 42.079 42.079 42.079 mm"</li> <li>Rainfall losses 32.739 8.972 28.746 mm"</li> <li>Runoff volume 2.80 2.00 4.80 c.m/sec"</li> <li>Rainfall losses 32.739 8.972 28.746 mm"</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.002 0.002 0.003 c.m/sec"</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add R</li></ul>	<pre>" 0.836 Total Area" " 3.100 Flow length" " 6.000 Overland Slope" " 0.830 Pervious Area" " 3.100 Pervious length" " 6.000 Pervious slope" " 0.066 Impervious slope" " 0.066 Impervious slope" " 0.250 Pervious Manning 'n'" " 0.220 Pervious Manning 'n'" " 0.220 Pervious Korf coefficient" " 0.100 Pervious Ia/S coefficient" " 0.100 Pervious SCS Curve No." " 0.221 Pervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.222 Pervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.151 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.787 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.787 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.787 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.603 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.036 hectare" " Time of concentration 3.553 0.347 2.215 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Rainfall depth 42.079 42.079 42.079 mm" " Rainfall losses 32.739 8.972 28.746 mm" " Runoff depth 9.340 33.107 13.333 mm" " Runoff depth 9.340 33.107 13.333 mm" " Runoff coefficient 0.222 0.787 0.317 " " Maximum flow 0.002 0.002 0.003 c.m/sec" "40 HYDROGRAPH Add Runoff " 4 Add Runoff " 4 O.003 0.003 0.003 0.006 0.006" "40 HYDROGRAPH Combine 1" 6 Combine " 1 Node #" Controlled &amp; Uncontrolled" " Anximum flow 0.009 c.m/sec" " 0.003 0.003 0.003 0.006" "40 HYDROGRAPH Combine 1" 6 Combine 1" 6 Combine " 4 0 Add #" Controlled &amp; Uncontrolled" " Anximum flow 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.003 0.009 c.m/sec" " 0.009 c.m/sec" " 0.009 c.m/sec" " 0.009 c.m/sec" " 0.009 c.m/sec" " 0.009 c.m/</pre>	"	16.800	% Impervious"					
<ul> <li>3.100 Flow length"</li> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious slope"</li> <li>0.006 Impervious length"</li> <li>6.000 Impervious length"</li> <li>6.000 Impervious length"</li> <li>6.000 Impervious Slope"</li> <li>0.250 Pervious Manning 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.100 Pervious SCS Curve No."</li> <li>0.222 Pervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.101 Impervious SCS Curve No."</li> <li>0.105 Impervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious Ia/S coefficient"</li> <li>0.101 Impervious SCS Curve No."</li> <li>0.787 Impervious Gerfficient"</li> <li>0.108 Impervious Ia/S coefficient"</li> <li>0.109 Impervious Ja/S coefficient"</li> <li>0.100 Impervious Ja/S coefficient"</li> <li>0.100 Impervious Ia/S coefficient"</li> <li>0.103 Impervious Ia/S coefficient"</li> <li>0.104 Impervious Ia/S coefficient"</li> <li>0.1051 Impervious Ia/S coefficient"</li> <li>0.106 Impervious Ia/S coefficient"</li> <li>0.108 Impervious Ia/S coefficient"</li> <li>0.109 Impervious Ia/S coefficient"</li> <li>0.003 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.036 hectare'</li> <li>Time of concentration 3.553 0.347 2.215 minutes'</li> <li>Time to Centroid 110.320 89.897 101.800 minutes'</li> <li>Rainfall depth 42.079 42.079 mm'</li> <li>Rainfall losses 32.739 8.972 28.746 mm'</li> <li>Runoff depth 9.340 33.107 13.333 mm'</li> <li>Runoff depth 9.340 33.107 13.333 mm'</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.002 0.002 0.002 0.003 c.m/sec'</li> <li>40 HYDROGRAPH Add Runoff "</li> <ul> <li>4 Add Runoff "</li></ul></ul>	<pre>3.100 Flow length"     6.000 Overland Slope"     0.030 Pervious Area"     3.100 Pervious length"     6.000 Impervious slope"     0.006 Impervious Area"     3.100 Impervious Area"     3.100 Impervious length"     6.000 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious Slope"     0.250 Pervious SCS Curve No."     0.222 Pervious Runoff coefficient"     0.100 Pervious Initial abstraction"     0.015 Impervious SCS Curve No."     0.787 Impervious SCS Curve No."     0.787 Impervious SCS Curve No."     0.787 Impervious SCS Curve No."     0.787 Impervious SCS Curve No."     0.603 0.000 0.006 0.006 c.m/sec"     Catchment 203 Pervious Impervious Initial abstraction"     0.003 0.000 0.006 0.006 hectare"     Time of concentration 3.553 0.347 2.215 minutes"     Rainfall depth    42.079    42.079    mm"     Rainfall depth    42.079    42.079    mm"     Rainfall lopth     42.079    42.079    mm"     Rainfall opth     42.079    42.079    mm"     Rainfall lopth     9.340     33.107     13.333    mm"     Runoff depth     9.340     33.107     13.333    mm"     Runoff dopth     9.340     33.107     13.333    mm"     Runoff dopth     9.340     33.107     13.333    mm"     Runoff coefficient     0.022     0.082     0.003     c.m/sec"     40 HYDROGRAPH Add Runoff "</pre>	"	0.036	Total Area"					
<ul> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious slope"</li> <li>0.006 Impervious Area"</li> <li>3.100 Impervious Slope"</li> <li>0.006 Impervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious Sumoff coefficient"</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.000 Impervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.100 Pervious Initial abstraction"</li> <li>0.101 Impervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.108 Impervious Runoff coefficient"</li> <li>0.109 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious Initial abstraction"</li> <li>0.030 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.006 minutes'</li> <li>Time of concentration 3.553 0.347 2.215 minutes'</li> <li>Time to Centroid 110.320 89.897 101.800 minutes'</li> <li>Time to Centroid 110.320 89.8971 201.800 minutes'</li> <li>Rainfall depth 42.079 42.079 42.079 mm''</li> <li>Rainfall losses 32.739 8.972 28.746 mm''</li> <li>Runoff depth 9.340 33.107 13.333 mm''</li> <li>Runoff depth 9.340 33.107 13.333 mm''</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.002 0.002 0.003 c.m/sec'</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>0.003 0.003 0.006 0.006"</li> <li>40 HYDROGRAPH Copy to Outflow"</li> <li>8 Copy to Outflow"</li> <li>6 Combine "</li> </ul>	<pre> " 6.000 Overland Slope" " 0.030 Pervious Area" " 0.000 Pervious slope" " 0.006 Impervious Area" " 0.006 Impervious slope" " 0.200 Pervious Slope" " 0.200 Pervious Slope" " 0.222 Pervious Manning 'n'" " 0.222 Pervious Runoff coefficient" " 0.100 Pervious SCS Curve No." " 0.222 Pervious Manning 'n'" " 0.222 Pervious Manning 'n'" " 0.100 Pervious SCS Curve No." " 0.222 Pervious Manning 'n'" " 0.803 0.000 0.006 0.006 c.m/sec" " 0.777 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious Sunoff coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.603 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.006 0.036 hectare" " Time to Centroid 110.320 89.897 101.800 minutes" " Surface Area 0.030 0.006 0.046 0.036 hectare" " Time to Centroid 110.320 89.897 101.800 minutes" " Rainfall depth 42.079 42.079 42.079 mm" Rainfall volume 12.60 2.54 15.15 C.m" Rainfall losses 32.739 8.972 28.746 mm" " Runoff volume 2.80 2.00 4.80 C.m/sec" " 4 Add Runoff " 4 Add Run</pre>	"	3.100	Flow length"					
<ul> <li>0.030 Pervious Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Pervious slope"</li> <li>0.006 Impervious Area"</li> <li>3.100 Impervious length"</li> <li>6.000 Impervious length"</li> <li>6.000 Impervious length"</li> <li>75.000 Pervious Manning 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.100 Pervious Initial abstraction"</li> <li>0.015 Impervious Along 'n'"</li> <li>98.000 Impervious CSC Curve No."</li> <li>0.787 Impervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious Ia/S coefficient"</li> <li>0.101 Impervious Ia/S coefficient"</li> <li>0.102 Impervious Ia/S coefficient"</li> <li>0.103 Impervious Ia/S coefficient"</li> <li>0.104 Impervious Ia/S coefficient"</li> <li>0.105 Impervious Ia/S coefficient"</li> <li>0.106 Oconcentration 3.553 0.347 2.215 minutes'</li> <li>Time of concentration 3.553 0.347 2.215 minutes'</li> <li>Time to Centroid 110.320 89.897 101.800 minutes'</li> <li>Rainfall depth 42.079 42.079 42.079 mm"</li> <li>Rainfall volume 12.60 2.54 15.15 c.m"</li> <li>Rainfall losses 32.739 8.972 88.746 mm"</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff depth 42.002 0.002 0.003 c.m/sec'</li> <li>Maximum flow 0.002 0.002 0.003 c.m/sec'</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>6 Combine "</li> </ul>	<ul> <li>0.030 Pervious Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Pervious Slope"</li> <li>0.006 Impervious Area"</li> <li>3.100 Impervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.100 Pervious Ia/S coefficient"</li> <li>0.100 Pervious SCS Curve No."</li> <li>0.212 Pervious Initial abstraction"</li> <li>0.605 Impervious SCS Curve No."</li> <li>0.615 Impervious SCS Curve No."</li> <li>0.677 Impervious Runoff coefficient"</li> <li>0.608 0.006 0.006 0.006 c.m/sec"</li> <li>0.787 Impervious Initial abstraction"</li> <li>0.603 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.036 hectare"</li> <li>Time of concentration 3.553 0.347 2.215 minutes"</li> <li>Time of concentration 3.553 0.347 2.215 minutes"</li> <li>Time of concentration 3.553 0.347 2.215 minutes"</li> <li>Rainfall depth 42.079 42.079 42.079 mm"</li> <li>Rainfall volume 12.60 2.54 15.15 c.m"</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.002 0.002 0.003 c.m/sec"</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 A</li></ul>	"	6.000	Overland Slope"					
<pre>" 3.100 Pervious length" " 6.000 Pervious slope" " 0.006 Impervious Area" " 3.100 Impervious length" " 6.000 Impervious length" " 6.000 Impervious slope" " 0.250 Pervious Manning 'n'" " 0.222 Pervious Runoff coefficient" " 0.100 Pervious Ia/S coefficient" " 0.100 Pervious Ia/S coefficient" " 0.101 Impervious SLOS Curve No." " 0.102 Impervious SCS Curve No." " 0.103 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.787 Impervious SCS Curve No." " 0.618 Impervious Initial abstraction" " 0.003 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.046 hectare" " Surface Area 0.030 0.006 0.036 hectare" " Time of concentration 3.553 0.347 2.215 minutes' " Time to Centroid 110.320 89.897 101.800 minutes' " Rainfall depth 42.079 42.079 42.079 mm" " Rainfall losses 32.739 8.972 28.746 mm" " Runoff depth 9.340 33.107 13.333 mm" " Runoff volume 2.80 2.00 4.80 c.m" " Anainfall losses 32.739 8.972 08.746 mm" " Runoff coefficient 0.222 0.787 0.317 " " Maximum flow 0.002 0.002 0.003 c.m/sec" " 40 HYDROGRAPH Add Runoff " " 0.003 0.003 0.006 0.006" " 40 HYDROGRAPH Combine 1" " 6 Combine 1" " 6 Combine 1" " 6 Combine "</pre>	<pre>" 3.100 Pervious length" " 6.000 Pervious slope" " 0.006 Impervious Area" " 3.100 Impervious length" " 6.000 Impervious slope" " 0.250 Pervious Manning 'n'" " 75.000 Pervious SCS Curve No." " 0.222 Pervious Runoff coefficient" " 8.467 Pervious Jal/s coefficient" " 8.467 Pervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.737 Impervious Runoff coefficient" " 0.100 Impervious SCS Curve No." " 0.737 Impervious Runoff coefficient" " 0.100 Impervious Ia/S coefficient" " 0.101 Impervious Ia/S coefficient" " 0.103 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.036 menutes" " Time of concentration 3.553 0.347 2.215 minutes" " Time to Centroid 110.320 89.897 101.800 minutes" " Rainfall volume 12.60 2.54 15.15 c.m" " Rainfall volume 12.60 2.54 15.15 c.m" " Rainfall losses 32.739 8.972 28.746 mm" " Runoff depth 9.340 33.107 13.333 mm" " Runoff volume 2.80 2.00 4.80 c.m'sec" " 4 Add Runoff " 4</pre>	"	0.030	Pervious Area"					
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<ul> <li>0.006 Impervious Area"</li> <li>3.100 Impervious length"</li> <li>6.000 Impervious slope"</li> <li>0.250 Pervious Manning 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.222 Pervious Runoff coefficient"</li> <li>0.100 Pervious Ia/S coefficient"</li> <li>0.100 Pervious Initial abstraction"</li> <li>0.015 Impervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.787 Impervious Runoff coefficient"</li> <li>0.100 Impervious Ia/S coefficient"</li> <li>0.100 Impervious Initial abstraction"</li> <li>0.603 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.006 0.036 hectare'</li> <li>Time to Centroid 110.320 89.897 101.800 minutes'</li> <li>Rainfall depth 42.079 42.079 mm"</li> <li>Rainfall volume 12.60 2.54 15.15 c.m"</li> <li>Rainfall losses 32.739 8.972 28.746 mm"</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff depth 9.340 33.107 13.333 mm"</li> <li>Runoff coefficient 0.222 0.787 0.317 "</li> <li>Maximum flow 0.002 0.002 0.003 c.m/sec'</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>0.003 0.003 0.006 0.006"</li> <li>40 HYDROGRAPH Copy to Outflow"</li> <li>8 Copy to Outflow"</li> <li>8 Copy to Outflow"</li> <li>6 Combine "</li> </ul>	"0.006       Impervious Area"         "3.100       Impervious length"         "6.000       Impervious slope"         0.250       Pervious Manning 'n'"         "5.000       Pervious SCS Curve No."         "0.222       Pervious Runoff coefficient"         "0.222       Pervious Initial abstraction"         "0.100       Pervious SCS Curve No."         "0.101       Impervious Manning 'n'"         "98.000       Impervious CCS Curve No."         "0.101       Impervious SCS Curve No."         "0.102       Impervious Runoff coefficient"         "0.103       Impervious SCS Curve No."         "0.787       Impervious Sunoff coefficient"         "0.103       Impervious Initial abstraction"         0.103       Pervious Impervious Total Area "         "Catchment 203       Pervious Impervious Total Area"         "Surface Area       0.030       0.006       0.066         "Ime to Concentration 3.553       0.347       2.215       minutes"         Time to Concentration 3.553       0.347       2.215       minutes"         "Kainfall depth       42.079       42.079       m"         "Rainfall losses       32.739       8.972       28.746       m" <t< td=""><td>"</td><td>6.000</td><td>Pervious slope"</td><td></td><td></td><td></td><td></td><td></td></t<>	"	6.000	Pervious slope"					
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0.003       0.006       0.006       0.006       c.m/sec"         "Catchment 203       Pervious       Impervious Total Area       "         Surface Area       0.030       0.006       0.036       hectare'         "Impervious Total Area       "       Surface Area       0.030       0.006       0.036       hectare'         "Impervious Total Area       "       Surface Area       0.030       0.006       0.036       hectare'         "Impervious Total Area       "       Surface Area       0.030       0.006       0.036       hectare'         "Impervious Total Area       "       Surface Area       0.030       0.006       0.036       hectare'         "Impervious Total Area       "       Time of concentration       3.553       0.347       2.215       minutes'         "Impervious Total Area       "       Time of concentration       3.553       0.347       2.215       minutes'         "Rainfall depth       42.079       42.079       42.079       mm"       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222 <t< td=""><td>0.003         0.003         0.006         0.006         0.006         c.m/sec"           "         Catchment 203         Pervious         Impervious Total Area         "           "         Surface Area         0.030         0.006         0.036         hectare"           "         Time of concentration         3.553         0.347         2.215         minutes"           "         Time to Centroid         110.320         89.897         101.800         minutes"           "         Rainfall depth         42.079         42.079         42.079         mm"           "         Rainfall volume         12.60         2.54         15.15         c.m"           "         Rainfall losses         32.739         8.972         28.746         mm"           "         Runoff depth         9.340         33.107         13.333         mm"           "         Runoff coefficient         0.222         0.787         0.317         "           "         Maximum flow         0.002         0.002         0.003         c.m/sec"           "         Maximum flow         0.003         0.006         0.006"           "         4         Add Runoff&lt;"</td>         "         0.003&lt;</t<>	0.003         0.003         0.006         0.006         0.006         c.m/sec"           "         Catchment 203         Pervious         Impervious Total Area         "           "         Surface Area         0.030         0.006         0.036         hectare"           "         Time of concentration         3.553         0.347         2.215         minutes"           "         Time to Centroid         110.320         89.897         101.800         minutes"           "         Rainfall depth         42.079         42.079         42.079         mm"           "         Rainfall volume         12.60         2.54         15.15         c.m"           "         Rainfall losses         32.739         8.972         28.746         mm"           "         Runoff depth         9.340         33.107         13.333         mm"           "         Runoff coefficient         0.222         0.787         0.317         "           "         Maximum flow         0.002         0.002         0.003         c.m/sec"           "         Maximum flow         0.003         0.006         0.006"           "         4         Add Runoff<"		0.518	Impervious Initi	al abstr	action'	ı		
"Catchment 203       Pervious       Impervious       Total Area         "Surface Area       0.030       0.006       0.036       hectare'         "Ime of concentration       3.553       0.347       2.215       minutes'         "Ime of concentration       3.553       0.347       2.215       minutes'         "Ime of concentration       110.320       89.897       101.800       minutes'         "Rainfall depth       42.079       42.079       42.079       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"	Catchment 203       Pervious       Impervious Total Area         "Surface Area       0.030       0.006       0.036       hectare"         "Ime of concentration       3.553       0.347       2.215       minutes"         "Ime of concentration       110.320       89.897       101.800       minutes"         "Rainfall depth       42.079       42.079       42.079       mm"         "Rainfall volume       12.60       2.54       15.15       c.m"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff       "       0.003       0.006       .m/sec"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       6       Combine       "         "40       HYDROGRAPH Combine       1" <td></td> <td>01920</td> <td>0.003 0</td> <td>. 000</td> <td>0.006</td> <td>0.006</td> <td>.m/sec"</td> <td></td>		01920	0.003 0	. 000	0.006	0.006	.m/sec"	
Surface Area       0.030       0.006       0.036       hectare'         Time of concentration       3.553       0.347       2.215       minutes'         Time to Centroid       110.320       89.897       101.800       minutes'         Rainfall depth       42.079       42.079       mm"         Rainfall lopth       42.079       42.079       mm"         Rainfall losses       32.739       8.972       28.746       mm"         Rainfall losses       32.739       8.972       28.746       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec'         40       HYDROGRAPH Add Runoff       "       0.003       0.006       0.006"         40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       6	Surface Area       0.030       0.006       0.036       hectare"         Time of concentration       3.553       0.347       2.215       minutes"         "Ime to Centroid       110.320       89.897       101.800       minutes"         "Rainfall depth       42.079       42.079       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       "       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       6       Combine       "         "40       HYDROGRAPH       Combine       1"       "       6       Combine       "         "40       <		C	atchment 203	Perv	ious	Impervious	Total Area	п
Time of concentration 3.553       0.347       2.215       minutes'         "Ime to Centroid       110.320       89.897       101.800       minutes'         Rainfall depth       42.079       42.079       42.079       mm"         "Rainfall volume       12.60       2.54       15.15       c.m"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff<"	Time of concentration 3.553       0.347       2.215       minutes"         Time to Centroid       110.320       89.897       101.800       minutes"         Rainfall depth       42.079       42.079       42.079       mm"         Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.006       0.006"         "40       HYDROGRAPH Combine       1"       6       Combine       "         "5003       0.003       0.003       0.006"       "       "         "6       Combine       1"       1       Node #"       "       Controlled & Uncontrolled"         "7       Maximum flow <td< td=""><td></td><td>Si</td><td>urface Area</td><td>0.03</td><td>0</td><td>0.006</td><td>0.036</td><td>hectare"</td></td<>		Si	urface Area	0.03	0	0.006	0.036	hectare"
Time to Centroid       110.320       89.897       101.800       minutes'         Rainfall depth       42.079       42.079       42.079       mm"         Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         "Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff<"	Time to Control 110.320       89.897       101.800       minutes"         Rainfall depth       42.079       42.079       42.079       mm"         Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff volume       2.80       2.00       4.80       c.m"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.006"         "40       HYDROGRAPH Combine       1"       6       Combine       "         "50.003       0.003       0.003       0.006"       "       "         "6       Combine       1"       *       6       Combine       "         "6       Combine       0.009       c.m/sec"       *		T	ime of concentrati	on 3.55	3	0.347	2,215	minutes"
Rainfall depth       42.079       42.079       42.079       mm"         Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff volume       2.80       2.00       4.80       c.m"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec'         40       HYDROGRAPH Add Runoff       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       1"       6       Combine       1"	Rainfall depth       42.079       42.079       mm"         Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.006"       "         "40       HYDROGRAPH       Combine       "       "       0.006"		т. Т	ime to Centroid	110	320	89.897	101,800	minutes"
Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff<"	Rainfall volume       12.60       2.54       15.15       c.m"         Rainfall losses       32.739       8.972       28.746       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       6       Combine       "       1       Node #"         "40       HYDROGRAPH Combine       1"       1       Node #"       "       0.003       0.006"         "40       HYDROGRAPH       Combine       1"       1       Node #"       "       1         "40       HYDROGRAPH       Combin		R	ainfall denth	42.0	79 79	42.079	42.079	mm"
"Rainfall losses       32.739       8.972       28.746       mm"         "Runoff depth       9.340       33.107       13.333       mm"         "Runoff volume       2.80       2.00       4.80       c.m"         "Runoff coefficient       0.222       0.787       0.317       "         "Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff<"	Rainfall losses       32.739       8.972       28.746       mm"         Runoff depth       9.340       33.107       13.333       mm"         Runoff volume       2.80       2.00       4.80       c.m"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec"         ''       Maximum flow       0.002       0.002       0.003       c.m/sec"         ''       Add Runoff "       ''       0.003       0.006       c.m/sec"         ''       0.003       0.003       0.006       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       0.003       0.003       0.006"       ''         ''       1       Node #"       ''       '' <td></td> <td>R</td> <td>ainfall volume</td> <td>12.6</td> <td> А</td> <td>2.54</td> <td>15.15</td> <td> C.m"</td>		R	ainfall volume	12.6	 А	2.54	15.15	 C.m"
"       Runoff depth       9.340       33.107       13.333       mm"         "       Runoff volume       2.80       2.00       4.80       c.m"         "       Runoff coefficient       0.222       0.787       0.317       "         "       Maximum flow       0.002       0.002       0.003       c.m/sec'         "       Maximum flow       0.003       0.006       0.003       c.m/sec'         "       4 Add Runoff "       "       0.003       0.006       0.006"         " 40       HYDROGRAPH Copy to Outflow"       "       8       Copy to Outflow"         "       0.003       0.003       0.006"       0.006"         " 40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         " 40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         " 40       HYDROGRAPH Combine       1"       "       6       Combine       1"	Runoff depth       9.340       33.107       13.333       mm"         Runoff volume       2.80       2.00       4.80       c.m"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       •       •       •       •         "40       HYDROGRAPH Copy to Outflow"       •       •       •       •         "40       HYDROGRAPH Copy to Outflow"       •       •       •       •         "40       HYDROGRAPH Copy to Outflow"       •       •       •       •         "40       HYDROGRAPH Copy to Outflow"       •<		R	ainfall losses	32.7	39	8.972	28.746	mm"
"       Runoff volume       2.80       2.00       4.80       c.m"         "       Runoff coefficient       0.222       0.787       0.317       "         "       Maximum flow       0.002       0.002       0.003       c.m/sec'         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       O.003       0.003       0.006       0.006"         "       4       O.003       0.003       0.006"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       40       HYDROGRAPH       Combine       1"         "       6       Combine       1"	Runoff volume       2.80       2.00       4.80       c.m"         Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       •       •       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       •		Ri	unoff denth	9 34	9 9	33 107	13 333	mm"
"       Runoff coefficient       0.222       0.787       0.317       "         "       Maximum flow       0.002       0.002       0.003       c.m/sec'         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       Add Runoff "       "       0.003       0.006       0.006"         "       4       0.003       0.003       0.006       0.006"         "       8       Copy to Outflow"       "       0.003       0.003       0.006"         "       40       HYDROGRAPH Combine       1"       "       6       Combine       1"	Runoff coefficient       0.222       0.787       0.317       "         Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH       Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH       Combine       1"       "       0.003       0.003       0.006"         "40       HYDROGRAPH       Combine       1"       "       "       Node #"       "         "40       HYDROGRAPH		Ri	unoff volume	2 80	0	2 00	4 80	с m"
"Maximum flow       0.002       0.002       0.003       c.m/sec'         "40       HYDROGRAPH Add Runoff "         "4       Add Runoff "         "4       0.003       0.003       0.006         "40       HYDROGRAPH Copy to Outflow"         "8       Copy to Outflow"         "0.003       0.003       0.003         "40       HYDROGRAPH Copy to Outflow"         "6       Combine	Maximum flow       0.002       0.002       0.003       c.m/sec"         "40       HYDROGRAPH Add Runoff "       4       Add Runoff "       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine 1"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine 1"       1       Node #"       0.009       c.m/sec"         "40       HYDROGRAPH Combine 1"       1       Node #"       0.009       c.m/sec"         "40       HYDROGRAPH Combine 1"       1       Node #"       0.009       c.m/sec"         "40       HYDROGRAPH Combine 1"       0.009       c.m/sec"       0.009       c.m/sec"         "40       HYDROGRAPH Combine 36.644       c.m"       0.009       c.m/sec"		Ri	unoff coefficient	0.22	2	0.787	0.317	"
"40 HYDROGRAPH Add Runoff " "4 Add Runoff " "4 Add Runoff " "40 HYDROGRAPH Copy to Outflow" "40 HYDROGRAPH Copy to Outflow" "40 0.003 0.003 0.003 0.006" "40 HYDROGRAPH Combine 1" "40 Combine 1"	"40       HYDROGRAPH Add Runoff "         "40       HYDROGRAPH Add Runoff "         0.003       0.003       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine 1"       0.003       0.003       0.006"         "40       HYDROGRAPH Combine 1"       6       Combine 1"       1         Node #"       Controlled & Uncontrolled"       0.009       c.m/sec"         "40       Hydrograph volume       36.644       c.m"		Ma	aximum flow	0.22 0 00	2	0 002	0 003	c m/sec"
"       4       Add Runoff "         "       0.003       0.003       0.006         " 40       HYDROGRAPH Copy to Outflow"         "       8       Copy to Outflow"         "       0.003       0.003       0.006"         " 40       HYDROGRAPH Combine 1"       0.003       0.006"         " 40       HYDROGRAPH Combine 1"       6       Combine "	4       Add Runoff "         9.003       0.003       0.006         9.003       0.003       0.006"         9       HYDROGRAPH Copy to Outflow"         8       Copy to Outflow"         9       0.003       0.003       0.006"         9       0.003       0.003       0.006"         9       40       HYDROGRAPH Combine 1"       0.003       0.006"         9       40       HYDROGRAPH Combine 1"       0.004       0.005       0.006"         9       1       Node #"       0.009       c.m/sec"         9       0.003       0.003       0.009       c.m/sec"         9       0.003       0.003       0.003       0.009		40 H	VDROGRAPH Add Runo	ff "	<u> </u>	0.002	0.005	c.m/ 5cc
"       0.003       0.003       0.006       0.006"         "       40       HYDROGRAPH Copy to Outflow"         "       8       Copy to Outflow"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       6       Combine       1"	"       0.003       0.003       0.006       0.006"         "       40       HYDROGRAPH Copy to Outflow"       0.003       0.003       0.006"         "       8       Copy to Outflow"       0.003       0.003       0.006"         "       0.003       0.003       0.006"       0.006"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       0.003       0.003       0.006"         "       1       Node #"       Controlled & Uncontrolled"         "       Maximum flow       0.009       c.m/sec"         Hydrograph volume       36.644       c.m"		-10 II 4	Add Runoff "					
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" 8 Copy to Outflow" 0.003 0.003 0.006" 40 HYDROGRAPH Combine 1" 6 Combine "	"       8       Copy to Outflow"         "       0.003       0.003       0.006"         " 40       HYDROGRAPH       Combine       1"         " 6       Combine "       1       Node #"         " 1       Node #"       Controlled & Uncontrolled"         " Maximum flow       0.009       c.m/sec"         Hydrograph volume       36.644       c.m"		40 H	VDROGRAPH Conv to	Outflow"	0.000	0.000		
" 0.003 0.003 0.006" "40 HYDROGRAPH Combine 1" " 6 Combine "	"       0.003       0.003       0.006"         "40       HYDROGRAPH       Combine       1"         "6       Combine       "       6         "1       Node #"       "       1         "2       Controlled & Uncontrolled"       0.009       c.m/sec"         "40       Hydrograph volume       36.644       c.m"		N 8	Conv to Outflow"	oucrien				
"40 HYDROGRAPH Combine 1" "6 Combine "	<pre>"40 HYDROGRAPH Combine 1" " 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled" " Maximum flow 0.009 c.m/sec" " Hydrograph volume 36.644 c.m" " 0.003 0.003 0.003 0.003</pre>		0		003	0 003	0 006"		
" 6 Combine "	<pre>" 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled" " Maximum flow 0.009 c.m/sec" " Hydrograph volume 36.644 c.m" " 0.003 0.003 0.003 0.003</pre>		40 H	VDROGRAPH Combin	≏ 1"	0.005	0.000		
	<pre>" 1 Node #" " Controlled &amp; Uncontrolled" " Maximum flow 0.009 c.m/sec" " Hydrograph volume 36.644 c.m" " 0.003 0.003 0.003 0.003</pre>		-0 11	Combine "					
" 1 Node #"	"Controlled & Uncontrolled"         "Maximum flow       0.009 c.m/sec"         "Hydrograph volume       36.644 c.m"         "O03 0.003 0.003 0.003       0.003 0.003		1	Node #"					
" Controlled & Uncontrolled"	"     Maximum flow     0.009     c.m/sec"       "     Hydrograph volume     36.644     c.m"		1	Controlled & Unc	ontrolla	d"			
$= \frac{1}{100} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad $	" Hydrograph volume 36.644 c.m"		M	aximum flow	SUCI OTTE	ч а ас	19 cm/c	<u>م</u> د"	
				vdrogranh volume		36 64	14 cm"		
"Hydrograph volume 36.644 c.m"	ריצואוי וא רואוי, וא רואוי, וא רואוי, וא געע גע			0.003 0	.003	0,003	0,009"		
" $36.644$ cm"			ну	yurograph votume	002	20.02			

"	40	HYI	DROGRAPH	Conflue	nce 1			
"		7	Confluenc	e "				
"		1	Node #"					
"			Controlle	d & Unco	ntrolled	"		
"		Max	ximum flow			0.009	c.m/sec"	
"		Hyd	drograph v	olume		36.644	c.m"	
"		-	0.00	3 0.	009	0.003	0.000"	
"	40	HYI	DROGRAPH C	opy to O	utflow"			
"		8	Copy to O	utflow"				
"			0.00	3 0.	009	0.009	0.000"	
"	38	ST	ART/RE-STA	RT TOTAL	S 1"			
"		3	Runoff To	tals on	EXIT"			
"		Tot	tal Catchm	ent area			0.148	hectare"
"		Tot	tal Imperv	ious are	а		0.088	hectare"
"		Tot	tal % impe	rvious			59.168"	
"	19	EX	IT"					

"			MIDUSS Output>'
"			MIDUSS version Version 2.25 rev. 473'
"			MIDUSS created Sunday, February 7, 2010'
"		10	Units used: ie METRIC'
"			Job folder: Q:\54925\100\SWM\10-Year-Post'
"			Output filename: 10-Year-Post.out
"			Licensee name: A'
"			Company
"			Date & Time last used: 5/27/2024 at 10:45:29 AM'
"	31	тт	ME PARAMETERS"
"	-	5.000	Time Step"
		180.000	Max. Storm length"
		1500.000	Max. Hydrograph"
	32	ST	ORM Chicago storm"
	52	1	Chicago storm"
		595 000	Coefficient A"
		0 360	Constant B"
		0.500	Exponent ("
		0.001	Exponence C
		180 000	Dupation"
		1 000	Time stop multiplion"
		1.000 Ma	vinum intensity $186.404$ mm/hn"
		Па	$\frac{100.494}{100.194}$
		6	Alahyd Hydrograph ovtonsion ysod in this filo"
	22	о С А	TCHMENT 201"
	22	1	Triangulan SCC"
		1	Fridigular SCS
		1	Equal tengen
		1	SCS Methou
		201	KOOTLOP Area
		100.000	% Impervious
		0.032	lotal Area
		15.000	Flow length
		10.000	Overland Slope"
		0.000	Pervious Area
		15.000	Pervious length"
		10.000	Pervious slope"
		0.032	Impervious Area"
		15.000	Impervious length"
		10.000	Impervious slope"
		0.250	Pervious Manning 'n'"
		75.000	Pervious SCS Curve No."
		0.000	Pervious Runoff coefficient"
		0.100	Pervious Ia/S coefficient"
		8.467	Pervious Initial abstraction"
		0.015	Impervious Manning 'n'"
		98.000	Impervious SCS Curve No."
		0.848	Impervious Runott coetticient"
		0.100	Impervious Ia/S coefficient"
		0.518	Impervious Initial abstraction"
"			0.013 0.000 0.000 0.000 c.m/sec"

"		Catchment 201	Perv	ious	Impervious	Total Area	"
"		Surface Area	0.00	0	0.032	0.032	hectare"
"		Time of concentration	on 6.73	1	0.717	0.717	minutes"
"		Time to Centroid	113.	309	89.944	89.944	minutes"
"		Rainfall depth	49.2	77	49.277	49.277	mm"
"		Rainfall volume	0.00		15.77	15.77	c.m"
"		Rainfall losses	36.1	70	7.476	7.476	mm"
"		Runoff depth	13.1	07	41.801	41.801	mm"
"		Runoff volume	0.00		13.38	13.38	c.m"
"		Runoff coefficient	0.00	0	0.848	0.848	н
"		Maximum flow	0.00	0	0.013	0.013	c.m/sec"
"	40	HYDROGRAPH Add Runo <sup>.</sup>	ff "				
"	4	Add Runoff "					
"		0.013 0	.013	0.000	0.000"		
"	40	HYDROGRAPH Copy to (	Outflow"				
"	8	Copy to Outflow"					
"		0.013 0	.013	0.013	0.000"		
"	40	HYDROGRAPH Next lin	k "				
"	5	Next link "					
"		0.013 0	.013	0.013	0.000"		
"	33	CATCHMENT 202"					
"	1	Triangular SCS"					
"	1	Equal length"					
"	1	SCS method"					
"	202	Controlled Area"					
"	61.900	% Impervious"					
"	0.080	Total Area"					
"	12.300	Flow length"					
"	3.300	Overland Slope"					
"	0.030	Pervious Area"					
"	12.300	Pervious length"					
	3.300	Pervious slope"					
	0.050	Impervious Area"					
"	12.300	Impervious lengt	h"				
	3.300	Impervious slope	"				
	0.250	Pervious Manning	'n'"				
	75.000	Pervious SCS Cur	ve No."				
	0.269	Pervious Runoff	coeffici	ent"			
	0.100	Pervious Ia/S co	efficien	t"			
	8.467	Pervious Initial	abstrac	tion"			
	0.015	Impervious Manni	ng 'n'"				
	98.000	Impervious SCS C	urve No.				
	0.856	Impervious Runof	+ coeffi	cient"			
	0.100	Impervious Ia/S	coeffici	ent"			
	0.518	Impervious Initia	al abstr	action'	•		
		0.021 0	.013	0.013	0.000 (	c.m/sec"	
		Catchment 202	Perv	lous	Impervious	Total Area	
		Surtace Area	0.03	6 2	0.050	0.080	nectare"
		lime of concentratio	on 8.33	3	0.887	2.093	minutes"
a		Time to Centroid	115.	434	89.727	93.890	minutes"

"	Rainfall depth	49.277	49.277	49.277	mm"
"	Rainfall volume	15.02	24.40	39.42	c.m"
"	Rainfall losses	36.029	7.077	18.108	mm"
"	Runoff depth	13.248	42.200	31.170	mm"
"	Runoff volume	4.04	20.90	24.94	c.m"
"	Runoff coefficient	0.269	0.856	0.633	"
"	Maximum flow	0.002	0.020	0.021	c.m/sec"
"	40 HYDROGRAPH Add Runof	f "			
"	4 Add Runoff "				
"	0.021 0.	034 0.013	0.00	9"	
"	54 POND DESIGN"				
"	0.034 Current peak flow	c.m/sec"			
"	0.015 Target outflow	c.m/sec"			
"	38.3 Hvdrograph volume	c.m"			
"	7. Number of stages"				
"	420.801 Minimum water lev	el metre"			
п	422.110 Maximum water lev	el metre"			
п	420.801 Starting water le	vel metre"			
"	0 Keep Design Data:	1 = True; 0	= False"		
"	Level Discharge	Volume"			
п	420.801 0.000	0.000"			
п	421.860 0.00555	1.01E-05"			
п	421.910 0.00568	1.244"			
п	421.960 0.00581	7.462"			
"	422.010 0.00594	22.139"			
п	422.060 0.00607	45.015"			
п	422.110 0.1091	68.735"			
п	1. WEIRS"				
"	Crest Weir	Crest	Left	Right"	
"	elevation coefficie	breadth si	deslope s:	ideslope"	
"	422.060 0.900	6.000	0.000	0.000"	
"	1. ORIFICES"				
п	Orifice Orifice	Orifice Nu	mber of"		
п	invert coefficie	diameter o	rifices"		
"	420.801 0.630	0.0500	1.000"		
"	Peak outflow	0.0	06 c.m.	/sec"	
"	Maximum level	421.9	, 75 meti	re"	
"	Maximum storage	11.9	48 c.m'		
"	Centroidal lag	1.8	22 hours	s"	
"	0.021 0.034	0.006	0.000 c	.m/sec"	
"	40 HYDROGRAPH Combine	1"			
"	6 Combine "				
"	1 Node #"				
"	Controlled & Unco	ntrolled"			
"	Maximum flow	0.0	06 c.m.	/sec"	
"	Hydrograph volume	38.4	57 c.m'		
"	0.021 0.1	034 0.006	0.00	5"	
"	40 HYDROGRAPH Start - N	ew Tributarv"			
"	2 Start - New Tribu	tary"			
"	0.021 0.	000 0.006	0.00	5"	

"	33 C.	ATCHMENT 203"				
"	1	Triangular SCS"				
"	1	Equal length"				
"	1	SCS method"				
"	203	Uncontrolled Area	a"			
"	16.800	% Impervious"				
"	0.036	Total Area"				
"	3.100	Flow length"				
"	6.000	Overland Slope"				
"	0.030	Pervious Area"				
"	3.100	Pervious length"				
"	6.000	Pervious slope"				
"	0.006	Impervious Area"				
"	3.100	Impervious length	ו"			
"	6.000	Impervious slope'	1			
"	0.250	Pervious Manning	'n'"			
"	75.000	Pervious SCS Curv	/e No."			
"	0.266	Pervious Runoff d	coefficient"			
"	0.100	Pervious Ia/S coe	efficient"			
"	8.467	Pervious Initial	abstraction"			
"	0.015	Impervious Mannir	ng 'n'"			
"	98.000	Impervious SCS Cu	urve No."			
"	0.796	Impervious Runoff	<pre>coefficient"</pre>			
"	0.100	Impervious Ia/S o	coefficient"			
"	0.518	Impervious Initia	al abstraction	"		
"		0.004 0.	000 0.006	0.006	c.m/sec"	
"	C	atchment 203	Pervious	Impervious	Total Area	
"	S	urface Area	0.030	0.006	0.036	hectare"
"	Т	ime of concentratio	on 3.046	0.324	2.020	minutes"
"	Т	ime to Centroid	108.030	89.192	100.926	minutes"
"	R	ainfall depth	49.277	49.277	49.277	mm"
"	R	ainfall volume	14.76	2.98	17.74	c.m"
"	R	ainfall losses	36.190	10.039	31.797	mm"
"	R	unoff depth	13.087	39.238	17.480	mm"
"	R	unoff volume	3.92	2.37	6.29	c.m"
"	R	unoff coefficient	0.266	0.796	0.355	"
"	M	aximum flow	0.002	0.003	0.004	c.m/sec"
"	40 H	YDROGRAPH Add Runof	f "			
"	4	Add Runoff "				
"		0.004 0.	.004 0.006	0.006"		
"	40 H	YDROGRAPH Copy to (	Outflow"			
"	8	Copy to Outflow"				
		0.004 0.	004 0.004	0.006"		
	40 H	YDROGRAPH Combine	e 1"			
"	6	Combine "				
	1	Node #"				
		Controlled & Unco	ontro∐ed"			
"			<b>-</b> -	4 <b>A</b>		
" "	Μ	aximum flow	0.0	10 c.m/s	ec"	
" " "	M H	aximum flow ydrograph volume	0.0 44.7	10 c.m/s 50 c.m"	ec"	

"	40	HYI	DROGRAPH	Conflu	ience	1"		
"		7	Confluenc	e "				
"		1	Node #"					
"			Controlle	d & Unc	ontrolle	d"		
"		Max	ximum flow			0.010	c.m/sec"	
"		Hy	drograph v	olume		44.750	c.m"	
"		-	0.00	4 e	.010	0.004	0.000"	
"	40	HYI	DROGRAPH C	opy to	Outflow"			
"		8	Copy to O	utflow"	i			
"			0.00	4 e	.010	0.010	0.000"	
"	38	ST	ART/RE-STA	RT TOTA	LS 1"			
"		3	Runoff To	tals or	EXIT"			
"		To	tal Catchm	ent are	a		0.148	hectare"
"		To	tal Imperv	ious ar	rea		0.088	hectare"
"		To	tal % impe	rvious			59.168"	
"	19	EX.	IT"					

"			MIDUSS Output>"
"			MIDUSS version Version 2.25 rev. 473"
"			MIDUSS created Sunday, February 7, 2010"
"		10	Units used: ie METRIC"
"			Job folder: Q:\54925\100\SWM\25-Year-Post"
"			Output filename: 25-Year-Post.out"
"			Licensee name: A"
"			Company "
"			Date & Time last used: 5/27/2024 at 10:47:31 AM"
"	31	TI	ME PARAMETERS"
"	-	5.000	Time Step"
		180.000	Max. Storm length"
		1500.000	Max. Hydrograph"
	32	500.000	ORM Chicago storm"
	52	1	Chicago storm"
		792,999	Coefficient A"
		0 350	Constant B"
		0.550	Exponent ("
		0.000	Exponent C
		180 000	Dupation"
		1 000	Time step multipliep"
		1.000 Ma	vinum intensity $220.685 \text{ mm/hm}$
			tal dopth $E^{2}$
		6	A25byd Hydrograph oxtonsion used in this file"
	22	0	TCUMENT 201"
	22	1	Triangulan SCS"
		1	In Idiiguidi' SCS
		1	Equal tengen
		1	
		201	ROOTTOP Area
		100.000	% Impervious
		0.032	Iotal Area
		15.000	Flow length
		10.000	Overland Slope"
		0.000	Pervious Area
		15.000	Pervious length"
		10.000	Pervious slope"
		0.032	Impervious Area"
		15.000	Impervious length"
		10.000	Impervious slope"
		0.250	Pervious Manning 'n'"
"		75.000	Pervious SCS Curve No."
"		0.000	Pervious Runoff coefficient"
"		0.100	Pervious Ia/S coefficient"
"		8.467	Pervious Initial abstraction"
"		0.015	Impervious Manning 'n'"
"		98.000	Impervious SCS Curve No."
"		0.859	Impervious Runoff coefficient"
"		0.100	Impervious Ia/S coefficient"
"		0.518	Impervious Initial abstraction"
"			0.016 0.000 0.000 0.000 c.m/sec"

"	Catchment 201	Pervious	Impervious	Total Area	п
"	Surface Area	0.000	0.032	0.032	hectare"
"	Time of concentration	5.782	0.667	0.667	minutes"
"	Time to Centroid	110.559	89.471	89.471	minutes"
"	Rainfall depth	58.444	58.444	58.444	mm"
"	Rainfall volume	0.00	18.70	18.70	c.m"
"	Rainfall losses	39.968	8.264	8.264	mm"
"	Runoff depth	18.476	50.180	50.180	mm"
"	Runoff volume	0.00	16.06	16.06	c.m"
"	Runoff coefficient	0.000	0.859	0.859	н
"	Maximum flow	0.000	0.016	0.016	c.m/sec"
"	40 HYDROGRAPH Add Runoff	"			
"	4 Add Runoff "				
"	0.016 0.03	L6 0.000	0.000"		
"	40 HYDROGRAPH Copy to Out	flow"			
"	8 Copy to Outflow"				
"	0.016 0.03	L6 0.016	0.000"		
"	40 HYDROGRAPH Next link '				
"	5 Next link "				
"	0.016 0.03	L6 0.016	0.000"		
"	33 CATCHMENT 202"				
"	1 Triangular SCS"				
"	1 Equal length"				
"	1 SCS method"				
"	202 Controlled Area"				
"	61.900 % Impervious"				
"	0.080 Total Area"				
"	12.300 Flow length"				
"	3.300 Overland Slope"				
"	0.030 Pervious Area"				
"	12.300 Pervious length"				
"	3.300 Pervious slope"				
"	0.050 Impervious Area"				
"	12.300 Impervious length"				
"	3.300 Impervious slope"				
"	0.250 Pervious Manning 'r	י"			
"	75.000 Pervious SCS Curve	No."			
"	0.315 Pervious Runoff coe	efficient"			
"	0.100 Pervious Ia/S coef	ficient"			
"	8.467 Pervious Initial at	ostraction"			
"	0.015 Impervious Manning	'n'"			
"	98.000 Impervious SCS Curv	/e No."			
"	0.869 Impervious Runoff (	coefficient"			
"	0.100 Impervious Ia/S coe	efficient"			
	0.518 Impervious Initial	abstraction		_	
	0.026 0.02	L6 0.016	0.000	c.m/sec"	
	Catchment 202	Pervious	Impervious	Total Area	
	Surface Area	0.030	0.050	0.080	hectare"
	Time of concentration	7.158	0.826	1.980	minutes"
"	Time to Centroid	112.674	89.325	93.583	minutes"

"	Rainfall depth	58.444	58.444	58.444	mm"
"	Rainfall volume	17.81	28.94	46.76	c.m"
"	Rainfall losses	40.034	7.632	19.977	mm"
"	Runoff depth	18.410	50.812	38.467	mm"
"	Runoff volume	5.61	25.16	30.77	c.m"
"	Runoff coefficient	0.315	0.869	0.658	н
"	Maximum flow	0.003	0.025	0.026	c.m/sec"
"	40 HYDROGRAPH Add Runoff				
"	4 Add Runoff "				
"	0.026 0.0	0.016	0.00	0"	
"	54 POND DESIGN"				
"	0.042 Current peak flow	c.m/sec"			
"	0.015 Target outflow	c.m/sec"			
"	46.8 Hydrograph volume				
"	7. Number of stages"				
"	420.801 Minimum water leve	l metre"			
	422.110 Maximum water leve	l metre"			
	420.801 Starting water lev	vel metre"			
	0 Keep Design Data:	1 = True:  0	= False"		
	Level Discharge	Volume"			
	420.801 0.000	0.000"			
	421.860 0.00555	1.01E-05"			
	421.910 0.00568	1.244"			
	421.960 0.00581	7.462"			
	422.010 0.00594	22.139"			
	422.060 0.00607	45.015"			
	422.110 0.1091	68.735"			
	1. WEIRS"				
	Crest Weir	Crest	left	Right"	
	elevation coefficie	breadth sid	deslope s	ideslone"	
	422.060 0.900	6.000	0.000	0.000"	
	1. ORIFICES"				
	Orifice Orifice	Orifice Nu	mber of"		
	invert coefficie	diameter o	rifices"		
	420,801 0,630	0.0500	1.000"		
	Peak outflow	0.0	26 C.m.	/sec"	
	Maximum level	421.9	90 meti	re"	
	Maximum storage	16.2	82 c.m.	"	
	Centroidal lag	1.9	36 hour	ς"	
	0.026 0.042	0,006	0.000 c	 _m/sec"	
	40 HYDROGRAPH Combine	1"	0.000 0	· my see	
	6 Combine "	-			
	1 Node #"				
	Controlled & Uncon	trolled"			
	Maximum flow	0 AI	26 c.m	/sec"	
	Hydrogranh volume	46 5	54 cm	"	
	0,026 0 0	42 0.006	0,001	6"	
	40 HYDROGRAPH Start - Ne	w Tributary"	0.000	0	
	2 Start - New Tribut	arv"			
	0.026 0.0	100 0.006	0.00	6"	
	0.020 0.0	00 0.000	0.000	0	

"	33 C/	ATCHMENT 203"					
"	1	Triangular SCS"					
"	1	Equal length"					
"	1	SCS method"					
"	203	Uncontrolled Are	a"				
"	16.800	% Impervious"					
"	0.036	Total Area"					
"	3.100	Flow length"					
"	6.000	Overland Slope"					
"	0.030	Pervious Area"					
"	3.100	Pervious length"					
"	6.000	Pervious slope"					
"	0.006	Impervious Area"					
"	3.100	Impervious lengt	h"				
"	6.000	Impervious slope	"				
"	0.250	Pervious Manning	'n'"				
"	75.000	Pervious SCS Cur	ve No."				
"	0.313	Pervious Runoff	coefficie	ent"			
"	0.100	Pervious Ia/S co	efficient	t"			
"	8.467	Pervious Initial	abstract	tion"			
"	0.015	Impervious Manni	ng 'n'"				
"	98.000	Impervious SCS C	urve No.'				
"	0.804	Impervious Runof	f coeffi	cient"			
"	0.100	Impervious Ia/S	coefficie	ent"			
"	0.518	Impervious Initi	al abstra	action"			
"		0.006 0	.000	0.006	0.006 0	c.m/sec"	
"	Ca	atchment 203	Perv	ious	Impervious	Total Area	п
"	Si	urface Area	0.030	9	0.006	0.036	hectare"
"	T:	ime of concentrati	on 2.617	7	0.302	1.827	minutes"
"	T:	ime to Centroid	105.9	984	88.553	100.033	minutes"
"	Ra	ainfall depth	58.44	14	58.444	58.444	mm"
"	Ra	ainfall volume	17.53	1	3.53	21.04	c.m"
"	Ra	ainfall losses	40.13	30	11.429	35.308	mm"
"	Ri	unoff depth	18.33	14	47.015	23.136	mm"
"	Ri	unoff volume	5.49		2.84	8.33	c.m"
"	Ri	unoff coefficient	0.313	3	0.804	0.396	"
"	Ma	aximum flow	0.003	3	0.003	0.006	c.m/sec"
"	40 H	YDROGRAPH Add Runo	ff "				
"	4	Add Runoff "					
		0.006 0	.006	0.006	0.006"		
"	40 H	YDROGRAPH Copy to	Outflow"				
	8	Copy to Outflow"					
		0.006 0	.006	0.006	0.006"		
	40 H	YDROGRAPH Combin	e 1"				
	6	Combine "					
	1	Node #"					
		Controlled & Unc	ontrolled	d"	- ·		
	Ma	axımum †low		0.01	2 c.m/se	ec	
	Hy	ydrograph volume		54.88	3 C.M"		
				0 000	0 017"		

"	40	HYD	ROGRAPH	Conflue	ence	1"		
"		7	Confluence	e "				
"		1	Node #"					
"			Controlle	d & Unco	ontrolle	d"		
"		Max	imum flow			0.012	c.m/sec"	
"		Hyd	lrograph v	olume		54.883	c.m"	
"		2	0.00	6 0.	.012	0.006	0.000"	
"	40	HYD	ROGRAPH C	opy to (	Outflow"			
"		8	Copy to O	utflow"				
"			0.00	6 0.	.012	0.012	0.000"	
"	38	STA	RT/RE-STA	RT TOTAI	LS 1"			
"		3	Runoff To	tals on	EXIT"			
"		Tot	al Catchm	ent area	Э		0.148	hectare"
"		Tot	al Imperv	ious are	ea		0.088	hectare"
"		Tot	al % impe	rvious			59.168"	
"	19	EXI	Т"					

"			MIDUSS Output			>"
"			MIDUSS version		Versi	on 2.25 rev. 473"
"			MIDUSS created		Sunday,	February 7, 2010"
"		10	Units used:		-	ie METRIC"
"			Job folder:	Q	:\54925\100	\SWM\50-Year-Post"
"			Output filename:			50-Year-Post.out"
"			Licensee name:			Α"
"			Company			п
"			Date & Time last used:		5/27/202	24 at 10:56:17 AM"
"	31	TI	IME PARAMETERS"			
"		5.000	Time Step"			
"		180.000	Max. Storm length"			
"		1500.000	Max. Hydrograph"			
"	32	ST	ORM Chicago storm"			
"		1	Chicago storm"			
"		780.000	Coefficient A"			
"		0.360	Constant B"			
"		0.690	Exponent C"			
"		0.400	Fraction R"			
"		180.000	Duration"			
		1.000	Time step multiplier"			
		_ to to to Ma	aximum intensity	244.890	mm/hr"	
		Тс	otal depth	64.935	mm"	
"		6	050hvd Hvdrograph ext	tension used	in this fi	le"
	31	T]	IME PARAMETERS"			
	-	5.000	Time Step"			
		180.000	Max. Storm length"			
		1500.000	Max. Hydrograph"			
	32	SI	ORM Chicago storm"			
	-	1	Chicago storm"			
		780.000	Coefficient A"			
		0.360	Constant B"			
		0.690	Exponent C"			
		0.400	Fraction R"			
		180.000	Duration"			
		1.000	Time step multiplier"			
		_ t c c c c	aximum intensity	244,890	mm/hr"	
		Te	tal denth	64,935	mm"	
		6	050hvd Hvdrograph ext	tension used	in this fi	le"
	33	Č.	ATCHMENT 201"		111 CH15 11.	10
	55	1	Triangular SCS"			
		- 1	Faual length"			
		1	SCS method"			
		201	Roofton Area"			
		100,000	% Impervious"			
		0,032	Total Area"			
		15,000	Flow length"			
		10,000	Overland Slope"			
		0.000	Pervious Area"			
"		15.000	Pervious length"			
			· · · · · · · · · · · · · · · · · · ·			

"	10.0	00 Perv	/ious slope'						
п	0.0	32 Impe	ervious Area	a"					
п	15.0	00 Impe	ervious len	gth"					
"	10.0	00 Impe	ervious slo	pe"					
п	0.2	50 Perv	, ious Manni	ng 'n'					
	75.0	00 Perv	/ious SCS Cu	urve N	No."				
	0.0	00 Perv	/ious Runof <sup>.</sup>	f coef	fficie	nt"			
п	0.1	00 Perv	/ious Ia/S (	coeffi	icient				
	8.4	67 Perv	vious Initia	al abs	stract	ion"			
	0.0	15 Impe	ervious Man	ning '	'n'"				
	98.0		ervious SCS	Curve	≥ No."				
	0.8	64 Impe	ervious Runo	off co	peffic	ient"			
п	0.1	00 Tmpe	ervious Ta/	s coet	fficie	nt"			
п	0.5	18 Tmpe	ervious Init	tial a	abstra	ction'	,		
	0.5	10 100	0.018	0.000	) )	0.000	0,000	.m/sec"	
		Catchme	ont 201	0.000	Pervi		Impervious	Total Area	н
		Surface	Area		0 000	ous	0 032	0 032	hectare"
п		Time of	E Alea E concentrat	tion	5 296		0.032	0.032	minutes"
		Time to	Contentia	CION	100 0	92	80.050 80.170	80.050 80.170	minutes
		Painfa	l] donth		6/ 03	5	6/ 035	6/ 035	mm"
		Rainia.			04.95	5	204.935	204.935	
		Rainia. Painfa			12 11	л	20.70	20.70	C.III mm"
		Rainia. Pupoff	donth		42.41	4 1	5.000 56 076	5.000 56 075	
п			volumo		22.52	T			
			vorume	F	0.00		17.94	17.94	C.III
		RUNOTT	COETTICIEN	L	0.000		0.004	0.004	
	40				0.000 '		0.018	0.018	c.m/sec
	40		APH AUU KUI	ютт					
		4 AUU	RUNOTT	0 010	<b>`</b>	0 000	0.000		
	40		0.018	0.010	5	0.000	0.000		
	40	HYDRUG	APH COPY TO	ο Ουτι ."	LTOM				
		8 Copy	/ to Outrio	N 0 010	<b>`</b>	0 010	0.000		
	40		0.018	0.010	5	0.018	0.000		
	40	HYDROG	KAPH NEXT I	INK "					
		5 Next	t link "	0 010	_	0 010	0 000		
	22	CATCUM	0.018	0.018	3	0.018	0.000"		
	33		-NI 202"						
		1 Iria	angular SCS						
		1 Equa	al length"						
	-	1 SCS	method"						
	2	02 Cont	trolled Area	a"					
	61.9	00 % Ir	npervious"						
	0.0	80 Tota	al Area"						
	12.3	00 Flow	v length"						
	3.3	00 Over	Land Slope						
	0.0	30 Perv	/ious Area"						
"	12.3	00 Perv	vious lengt	h"					
	3.3	00 Perv	vious slope						
	0.0	50 Impe	ervious Area	a"					
	12.3	00 Impe	ervious len	gth"					
	3.3	00 Impe	ervious slop	pe"					

"	0.250 Perviou	ıs Manning 'r	า'"			
"	75.000 Perviou	s SCS Curve	No."			
"	0.344 Perviou	s Runoff coe	efficient"	I		
"	0.100 Perviou	s Ia/S coeft	ficient"			
"	8.467 Perviou	s Initial at	ostraction	າ"		
"	0.015 Impervi	ous Manning	'n'"			
"	98.000 Impervi	ous SCS Curv	ve No."			
"	0.876 Impervi	ous Runoff d	coefficien	nt"		
"	0.100 Impervi	ous Ia/S coe	efficient"	I		
"	0.518 Impervi	ous Initial	abstracti	.on"		
"	0.	029 0.02	18 0.0	0.000	∂ c.m/sec"	
"	Catchment	202	Pervious	5 Impervio	us Total Area	э "
"	Surface Ar	ea	0.030	0.050	0.080	hectare"
"	Time of co	ncentration	6.557	0.790	1.913	minutes"
"	Time to Ce	ntroid	111.147	89.072	93.371	minutes"
"	Rainfall c	lepth	64.935	64.935	64.935	mm"
"	Rainfall v	olume	19.79	32.16	51.95	c.m"
"	Rainfall l	osses	42.585	8.052	21.209	mm"
"	Runoff dep	th	22.350	56.883	43.726	mm''
"	Runoff vol	ume	6.81	28.17	34.98	c.m"
"	Runoff coe	fficient	0.344	0.876	0.673	п
"	Maximum fl	.OW	0.004	0.028	0.029	c.m/sec"
"	40 HYDROGRAPH	Add Runoff	"			
"	4 Add Rur	off "				
"	0.	029 0.04	47 0.0	0.000	9"	
"	54 POND DESIG	iN"				
"	0.047 Current	peak flow	c.m/sec	2"		
"	0.015 Target	outflow d	c.m/sec"			
"	52.9 Hydrogr	aph volume	c.m"			
"	7. Number	of stages"				
"	420.801 Minimum	water level	l metre	;"		
"	422.110 Maximum	water level	l metre	è"		
"	420.801 Startir	g water leve	el metr	`e"		
"	0 Keep De	sign Data: 1	1 = True;	0 = False"		
	Level	Discharge	Volume"			
	420.801	0.000	0.000"			
	421.860	0.00555	1.01E-05"			
	421.910	0.00568	1.244"			
	421.960	0.00581	7.462"			
	422.010	0.00594	22.139"			
	422.060	0.00607	45.015"			
	422.110	0.1091	68.735"			
	1. WEIRS"		- ·			
	Crest	Weir	Crest	Lett	Right"	
	elevation	coetticie	breadth	sideslope s:	Laeslope"	
	422.060	0.900	6.000	0.000	0.000"	
	1. ORIFICE	5°	0	Number C'		
	Uritice	Uritice	Uritice	Number of		
	invert	coetticie	ulameter	orifices"		
••	420,801	0.630	0.0500	1.000"		

"	Peak outflow 0.006 c.m/sec"
"	Maximum level 422.001 metre"
"	Maximum storage 19.582 c.m"
"	Centroidal lag 2.028 hours"
"	0.029 0.047 0.006 0.000 c.m/sec"
"	40 HYDROGRAPH Combine 1"
"	6 Combine "
"	1 Node #"
"	Controlled & Uncontrolled"
"	Maximum flow 0.006 c.m/sec"
"	Hydrograph volume 52.530 c.m"
"	0.029 0.047 0.006 0.006"
"	40 HYDROGRAPH Start - New Tributary"
"	2 Start - New Tributary"
"	0.029 0.000 0.006 0.006"
	33 CATCHMENT 203"
	1 Triangular SCS"
	1 Equal length"
	1 SCS method"
	203 Uncontrolled Area"
	16.800 % Impervious"
	0.036 Total Area"
	3.100 Flow length"
	6.000 Overland Slope"
	0.030 Pervious Area"
	3.100 Pervious length"
	6.000 Pervious slope"
	0.006 Impervious Area"
	3 100 Impervious length"
	6.000 Impervious slope"
	0.250 Pervious Manning 'n'"
	75.000 Pervious SCS Curve No."
	0 343 Pervious Runoff coefficient"
	0.100 Pervious Ta/S coefficient"
	8.467 Pervious Initial abstraction"
	0.015 Impervious Manning 'n'"
	98.000 Impervious SCS Curve No."
	0.809 Impervious Runoff coefficient"
	0 100 Impervious Ta/S coefficient"
	0.518 Impervious Initial abstraction"
	Catchment 203 Pervious Impervious Total Area "
	Surface Area $0.030$ $0.006$ $0.036$ hectare"
	Time of concentration 2,397 0,289 1,717 minutes"
	Time to Centroid $104 764 88 167 99 411$ minutes
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Rainfall losses $A2.665 = 12.422 = 25.56 C.III$
	$\frac{1}{1000} = \frac{1}{1000} = 1$
	$\frac{1}{22.270} = \frac{1}{22.313} = \frac{1}{27.331} = \frac{1}{1000}$

"		Runoff	coefficien	t 0.343	3	0.809	0.421	"
"		Maximum	flow	0.004	1	0.003	0.008	c.m/sec"
"	40	HYDROGR	APH Add Ru	noff "				
"		4 Add	Runoff "					
"			0.008	0.008	0.006	0.006"		
"	40	HYDROGR	APH Copy to	o Outflow"				
"		8 Copy	to Outflo	w"				
"			0.008	0.008	0.008	0.006"		
"	40	HYDROGR	APH Comb	ine 1"				
"		6 Comb	ine "					
"		1 Node	#"					
"		Cont	rolled & U	ncontrolled	1"			
"		Maximum	flow		0.01	3 c.m/s	ec"	
"		Hydrogr	aph volume		62.37	6 c.m"		
"			0.008	0.008	0.008	0.013"		
"	40	HYDROGR	APH Conf	luence 1	L"			
"		7 Conf	luence "					
"		1 Node	#"					
"		Cont	rolled & U	ncontrolled	;"			
"		Maximum	flow		0.01	3 c.m/s	ec"	
"		Hydrogr	aph volume		62.37	6 c.m"		
"			0.008	0.013	0.008	0.000"		
"	40	HYDROGR	APH Copy to	o Outflow"				
"		8 Copy	to Outflo	w"				
"			0.008	0.013	0.013	0.000"		
"	38	START/R	E-START TO	TALS 1"				
"		3 Runo	ff Totals	on EXIT"				
"		Total C	atchment a	rea		0	.148	hectare"
"		Total I	mpervious a	area		0	.088	hectare"
"		Total %	imperviou	s		59	.168"	
n	19	EXIT"	-					

"			MIDUSS Output		>"
"			MIDUSS version		Version 2.25 rev. 473"
"			MIDUSS created		Sunday, February 7, 2010"
"		10	Units used:		ie METRIC"
"			Job folder:	Q:	\54925\100\SWM\100-Year-Post"
"			Output filename:	C C	100-Year-Post-New.out"
"			Licensee name:		Α"
"			Company		"
"			Date & Time last used:		5/23/2024 at 2:05:05 PM"
п	31	TI	ME PARAMETERS"		-,,
"		5.000	Time Step"		
"		180.000	Max. Storm length"		
"		1500.000	Max. Hvdrograph"		
	32	ST	ORM Chicago storm"		
	22	1	Chicago storm"		
		851,000	Coefficient A"		
		0 290	Constant B"		
п		0.250	Exponent C"		
п		0.007	Exponence C Eraction B"		
		180 000	Duration"		
		1 000	Time step multipliep"		
		1.000 Ma	vinum intensity	270 966	mm/hn"
		Та	tal denth	71 978	11111/ 111 mm <sup>11</sup>
		6	100byd Hydrograph exter	ion used	in this file"
	22		TCUMENT 201"	sion useu	
	22	1	Thisney on SCS"		
		1	Faual longth"		
		1	Equal teligin		
		1 201	Sc3 method		
		100 000	« Transmissions"		
		100.000	% Impervious		
		15 000	IULAI Area		
		10.000	FIOW TENELI		
		10.000	Oversand Stope		
		0.000	Pervious Area		
		15.000	Pervious length		
		10.000	Pervious slope		
		0.032	Impervious Area		
		15.000	Impervious length		
		10.000	Impervious slope"		
		0.250	Pervious Manning 'n'"		
		/5.000	Pervious SCS Curve No."		
		0.000	Pervious Runott coetticier	nt"	
		0.100	Pervious Ia/S coefficient		
		8.467	Pervious Initial abstract:	ion"	
		0.015	Impervious Manning 'n'"		
		98.000	Impervious SCS Curve No."		
		0.868	Impervious Runoff coeffic:	ient"	
		0.100	Impervious Ia/S coefficien	nt"	
		0.518	Impervious Initial abstra	ction"	
"			0.020 0.000 0	0.000	0.000 c.m/sec"

"	Catchment 201	Perv	ious	Impervious	Total Area	
"	Surface Area	0.00	0	0.032	0.032	hectare"
"	Time of concentration	n 4.88	1	0.612	0.612	minutes"
"	Time to Centroid	107.	937	88.945	88.945	minutes"
"	Rainfall depth	71.9	78	71.978	71.978	mm"
"	Rainfall volume	0.00		23.03	23.03	c.m"
"	Rainfall losses	44.8	66	9.524	9.524	mm"
"	Runoff depth	27.1	12	62.454	62.454	mm"
"	Runoff volume	0.00	1	19.99	19.99	c.m"
"	Runoff coefficient	0.00	0	0.868	0.868	
"	Maximum flow	0.00	0	0.020	0.020	c.m/sec"
"	40 HYDROGRAPH Add Runof	f "				
"	4 Add Runoff "					
"	0.020 0.	020	0.000	0.000"		
"	40 HYDROGRAPH Copy to 0	utflow"				
"	8 Copy to Outflow"					
"	0.020 0.	020	0.020	0.000"		
"	40 HYDROGRAPH Next link	п				
"	5 Next link "					
"	0.020 0.	020	0.020	0.000"		
"	33 CATCHMENT 202"					
"	1 Triangular SCS"					
"	1 Equal length"					
"	1 SCS method"					
"	202 Controlled Area"					
"	61.900 % Impervious"					
"	0.080 Total Area"					
"	12.300 Flow length"					
"	3.300 Overland Slope"					
"	0.030 Pervious Area"					
"	12.300 Pervious length"					
"	3.300 Pervious slope"					
"	0.050 Impervious Area"					
"	12.300 Impervious length					
"	3.300 Impervious slope"					
"	0.250 Pervious Manning	'n'"				
"	75.000 Pervious SCS Curv	e No."				
"	0.376 Pervious Runoff c	oeffici	ent"			
"	0.100 Pervious Ia/S coe	fficien	t"			
"	8.467 Pervious Initial	abstrac	tion"			
"	0.015 Impervious Mannin	g 'n'"				
"	98.000 Impervious SCS Cu	rve No.	п			
"	0.882 Impervious Runoff	coeffi	cient"			
"	0.100 Impervious Ia/S c	oeffici	ent"			
"	0.518 Impervious Initia	l abstr	action'	u –		
"	0.033 0.0	020	0.020	0.000 (	c.m/sec"	
"	Catchment 202	Perv	ious	Impervious	Total Area	"
"	Surface Area	0.03	0	0.050	0.080	hectare"
"	Time of concentratio	n 6.04	2	0.758	1.856	minutes"
"	Time to Centroid	109.	717	88.890	93.220	minutes"

"	Rainfall depth	71.978	71.978	71.978	mm"
"	Rainfall volume	21.94	35.64	57.58	c.m"
"	Rainfall losses	44.925	8.522	22.392	mm"
"	Runoff depth	27.053	63.456	49.586	mm"
"	Runoff volume	8.25	31.42	39.67	c.m"
"	Runoff coefficient	0.376	0.882	0.689	п
"	Maximum flow	0.005	0.031	0.033	c.m/sec"
"	40 HYDROGRAPH Add Runoff	"			
"	4 Add Runoff "				
"	0.033 0.05	3 0.020	0.000"		
"	54 POND DESIGN"				
"	0.053 Current peak flow	c.m/sec"			
"	0.015 Target outflow c	.m/sec"			
	59.7 Hydrograph volume	C.m"			
	7. Number of stages"	C T III			
	420 801 Minimum water level	metre"			
п	A22 110 Maximum water level	metre"			
	422.110 Haximum water level	1 metre"			
	420:001 Starting watch itve	- True 0 -	- False"		
	Level Discharge	Volume"	- 10150		
	120 801 0 000	0 000"			
	420.801 0.000	1 01E_05"			
	421.800 0.80555	1 244"			
	421.910 0.00908	1.244 7.462"			
		7.402			
	422.010 0.00594	22.139			
	422.000 0.00007	45.015			
	422.110 0.1091	68./35			
	I. WEIRS	<u> </u>		<b>D</b> • • • • •	
	Crest Weir	Crest	Lett	Right	
	elevation coefficie	breadth sid	deslope side	estope"	
	422.060 0.900	6.000	0.000	0.000	
	1. ORIFICES				
	Urifice Urifice	Orifice Nur	mber of"		
	invert coefficie	diameter of	rifices"		
	420.801 0.630	0.0500	1.000"		
	Peak outflow	0.00	06 c.m/se	ec"	
	Maximum level	422.03	13 metre	•	
"	Maximum storage	23.33	12 c.m"		
"	Centroidal lag	2.12	29 hours"		
"	0.033 0.053	0.006	0.000 c.m,	/sec"	
"	40 HYDROGRAPH Combine	1"			
"	6 Combine "				
"	1 Node #"				
"	Controlled & Uncont	rolled"			
"	Maximum flow	0.0	06 c.m/se	ec"	
"	Hydrograph volume	58.93	11 c.m"		
"	0.033 0.05	3 0.006	0.006"		
"	40 HYDROGRAPH Start - New	Tributary"			
"	2 Start - New Tributa	ry"			
"	0.033 0.00	0 0.006	0.006"		

<ul> <li>1 Triangular SCS"         <ul> <li>Equal length"</li> <li>SCS method"</li> </ul> </li> <li>203 Uncontrolled Area"</li> <li>16.800 % Impervious"</li> <li>0.036 Total Area"</li> <li>3.100 Flow length"</li> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Impervious Area"</li> <li>3.100 Impervious length"</li> <li>6.000 Impervious Slope"</li> <li>0.036 Total Area"</li> <li>3.100 Pervious length"</li> <li>6.000 Pervious Slope"</li> <li>0.036 Pervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious Slope"</li> <li>0.250 Pervious Running 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.373 Pervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.813 Impervious Runoff coefficient"</li> <li>0.101 Impervious Succefficient"</li> <li>0.102 Impervious Succefficient"</li> <li>0.103 Impervious Succefficient"</li> <li>0.104 Impervious In/S coefficient"</li> <li>0.105 Impervious In/S coefficient"</li> <li>0.106 Impervious Ia/S coefficient"</li> <li>0.108 Impervious Ia/S coefficient"</li> <li>0.109 Impervious Ia/S coefficient"</li> <li>0.109 Impervious Ia/S coefficient"</li> <li>1.109 Impervious Ia/S coefficient"</li> <li>1.100 Impervious Ia/S coefficient"</li> <li>1.111 abstraction"</li> <li>0.029 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.006 c.m/sec"</li> <li>Time to Centroid 103.765 87.859 98.908 minutes"</li> <li>Rainfall volume 21.56 4.35 25.91 c.m"</li> <li>Rainfall volume 21.56 4.35 25.91 c.m"</li> <li>Rainfall losses 45.113 13.489 39.800 mm"</li> <li>Runoff volume 8.05 3.54 11.58 c.m"</li> <li>Runoff volume 8.05 3.54 11.58 c.m"</li> <li>Maximum flow 0.005 0.004 0.0006 c.m/sec"</li></ul>	"	33 C	ATCHMENT 203"				
<pre> 1 Equal length" 1 SCS method" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Stope" 20.006 Impervious length" 203 Uncontrolled Area" 203 Uncontrolled Area" 203 Uncontrolled Area" 204 Uncontrolled Stope" 205 Pervious Area" 205 Uncontrolled Area" 206 Impervious length" 207 Uncontrolled Area" 208 Uncontrolled Area" 209 Uncontrolled Area" 209 Uncontrolled Area" 209 Uncontrolled Area" 209 Uncontrolled Area" 200 Impervious Stope" 200 Uncontrolled Comparison Area" 200 Uncontrolled Area 200 Uncontrolled Area 200 Uncontrolled Area 200 Uncontrolled Area 200 Uncontrolled Area 200 Uncontrolled Area 200 Uncontrolled Uncontrolled 200 Uncontrolled Uncontrolled 200 Uncontrolled Area 200 Uncontrolled Uncontrolled 200 Uncontrolled Area 200 Uncontrolled Autorrolled 200 Uncontrolled Uncontrolled 200 Uncontrolled Area 200 Uncontrolled Uncontrolled 200 Uncontroll</pre>	"	1	Triangular SCS"				
<pre> 1 SCS method" 203 Uncontrolled Area" 3.000 Flow Iength" 6.080 X Impervious' 3.100 Flow length" 6.080 Overland Slope" 3.100 Pervious Area" 3.100 Pervious length" 6.080 Pervious slope" 4.0806 Impervious slope" 4.0806 Impervious slope" 4.0806 Impervious slope" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0807 Pervious Manning 'n'" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0807 Pervious Manning 'n'" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0806 Pervious Slope" 4.0807 Pervious Manning 'n'" 4.0807 Pervious Manning 'n'" 4.0808 Pervious Slope Pervious Slope" 4.0809 Pervious Slope Pervious Slope" 4.0809 Pervious Manning 'n'" 4.0809 Pervious Slope Pervious Impervious Total Area " 4.0809 Pervious Initial abstraction" 4.0809 Pervious Initial abstraction 4.0809 Pervious Impervious Impervious Total Area " 4.0807 Pervious Initial abstraction" 4.0808 Pervious Initial abstraction 4.0809 Pervious Impervious Total Area " 4.0808 Pervious Initial abstraction" 4.0809 Pervious Impervious Total Area " 4.0808 Pervious Initial abstraction" 4.0809 Pervious Impervious Total Area " 4.0808 Pervious Initial abstraction" 4.0809 Pervious Impervious Total Area " 4.0808 Pervious Initial abstraction" 4.0809 Pervious Impervious Total Area " 4.0808 Pervious Impervious Impervious Total Area " 4.0808 Pervious Impervious Imper</pre>	"	1	Equal length"				
<pre>" 283 Uncontrolled Area" " 16.800 % Impervious" " 0.836 Total Area" " 3.100 Flow length" " 6.000 Overland Slope" " 0.830 Pervious length" " 6.000 Pervious length" " 6.000 Impervious Area" " 3.100 Impervious Area" " 3.100 Impervious Area" " 3.100 Impervious Area" " 3.100 Impervious Slope" " 0.250 Pervious Mancing "n'" " 75.000 Pervious Slope" " 0.373 Pervious Runoff coefficient" " 0.373 Pervious Initial abstraction"</pre>	"	1	SCS method"				
<pre>16.800 % Impervious"</pre>	"	203	Uncontrolled Area"				
<pre>" 0.036 Total Area" " 3.100 Flow length" " 6.000 Overland Slope" " 0.030 Pervious Area" " 3.100 Pervious length" " 6.000 Pervious Slope" " 0.006 Impervious Area" " 3.100 Impervious Slope" " 0.250 Pervious Slope" " 0.250 Pervious Slope" " 0.373 Pervious Slope" " 0.373 Pervious Sco Curve No." " 0.373 Pervious Sunoff coefficient" " 0.100 Pervious Initial abstraction" " 0.155 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious CS Curve No." " 0.813 Impervious Initial abstraction"         0.009  0.000  0.006  0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area  0.030  0.006  0.036 hectare" " Time of concentration 2.209  0.277  1.619 minutes" " Time of concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Time of Concentration 2.209  0.277  1.619 minutes" " Ainfall depth 71.978 71.978 mm" " Rainfall dopth 71.973 0.813 0.447 " " Aainfall losses 45.113 13.489 39.800 mm" " Runoff coefficient 0.373 0.813 0.447 " "        0.009  0.009  0.006  0.006" " 40 HYDROGRAPH Add Runoff "         4 Add Runoff "         4 Add Runoff "              0.009  0.009  0.006  0.006" " 40 HYDROGRAPH Copy to Outflow" "        0.009  0.009  0.006  0.006" " 40 HYDROGRAPH Copy to Outflow" "        0.009  0.009  0.006  0.006" " 40 HYDROGRAPH Combine 1" "           0.009  0.009  0.00</pre>	"	16.800	% Impervious"				
<pre>" 3.100 Flow length" " 6.000 Overland Slope" " 0.030 Pervious Area" " 3.100 Pervious slope" " 6.006 Impervious Area" " 3.100 Impervious length" " 6.000 Impervious length" " 6.000 Impervious Slope" " 0.250 Pervious Manning 'n'" " 75.000 Pervious SCS Curve No." " 0.373 Pervious Runoff coefficient" " 0.100 Pervious SLOPE" " 0.100 Pervious SLOPE" " 0.100 Impervious SCS Curve No." " 0.813 Impervious Sunoff coefficient" " 0.100 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SUnoff coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.813 Impervious Initial abstraction" " 0.813 Impervious Initial abstraction" " 0.813 Impervious Initial abstraction" " 0.813 Impervious Initial abstraction" " 0.813 Impervious SCS Curve No." " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.830 0.006 0.836 hectare" " Time of concentration 2.209 0.277 1.619 minutes" " Time to Centroid 103.755 87.859 98.908 minutes" " Rainfall depth 71.978 71.978 71.978 mm" " Rainfall losses 45.113 13.489 99.800 mm" " Runoff depth 26.865 58.488 32.178 mm" " Runoff coefficient 0.373 0.813 0.447 " " Maximum flow 0.005 0.004 0.009 c.m/sec" " 40 HYDROGRAPH Add Runoff " " 4 Add Runoff " " 4 Add Runoff " " 6.009 0.009 0.009 0.006 0.006" "40 HYDROGRAPH Add Runoff " " 40 Add Runoff " " 6.009 0.009 0.009 0.009 0.006" "40 HYDROGRAPH Combine 1" " 6. Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled"</pre>	"	0.036	Total Area"				
<ul> <li>6.000 Overland Slope"</li> <li>0.030 Pervious Area"</li> <li>3.100 Pervious alope"</li> <li>0.006 Impervious alope"</li> <li>0.006 Impervious length"</li> <li>6.000 Impervious slope"</li> <li>0.250 Pervious Manning "n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.373 Pervious Runoff coefficient"</li> <li>0.100 Pervious SCS Curve No."</li> <li>0.373 Pervious Manning 'n'"</li> <li>98.000 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious Ta/S coefficient"</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.813 Impervious Ta/S coefficient"</li> <li>0.813 Impervious SCS Curve No."</li> <li>8.467 Pervious Initial abstraction"</li> <li>0.809 0.000 0.006 0.0066 0.036 hectare"</li> <li>Time of concentration 2.209 0.277 1.619 minutes"</li> <li>Time to Centroid 103.765 87.859 98.908 minutes"</li> <li>Rainfall depth 71.978 71.978 71.978 mm"</li> <li>Rainfall opth 71.978 71.978 mm"</li> <li>Rainfall opth 21.56 4.35 25.91 c.m"</li> <li>Runoff depth 26.865 3.54 11.58 c.m"</li> <li>Runoff coefficient 0.373 0.813 0.447</li> <li>Maximum flow 0.005 0.004 0.009 c.m/sec"</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>4 Add Runoff "</li> <li>0.009 0.009 0.009 0.006 0.006"</li> <li>40 HYDROGRAPH Combine 1"</li> <li>6 Combine 1"</li> <li>6 Combine 1"</li> <li>1 Node #"</li> <li>Controlled &amp; Uncontrolled"</li> </ul>	"	3.100	Flow length"				
<pre>" 0.030 Pervious Area" " 3.100 Pervious length" " 0.006 Impervious Area" " 3.100 Impervious Area" " 3.100 Impervious length" " 0.009 Impervious slope" " 0.250 Pervious Manning 'n'" " 75.000 Pervious SCS Curve No." " 0.373 Pervious Munoff coefficient" " 0.100 Pervious Ia/S coefficient" " 0.101 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious SCS Curve No." " 0.813 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Ia/S coefficient" " 0.000 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Time to Centroid 103.765 87.859 98.908 minutes" " Time to Centroid 103.765 87.859 98.908 minutes" " Rainfall depth 71.978 71.978 71.978 mm" " Rainfall losses 45.113 13.489 39.800 mm" " Runoff coefficient 0.373 0.813 0.447 " " Maximum flow 0.005 0.004 0.009 c.m/sec" " 40 HYDROGRAPH Add Runoff " " Add Runoff " " 440 HYDROGRAPH Add Runoff " " 440 HYDROGRAPH Add Runoff " " 440 HYDROGRAPH Combine 1" " 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled"</pre>	"	6.000	Overland Slope"				
<pre>3.100 Pervious length"     6.000 Pervious slope"     6.000 Impervious slope"     6.000 Impervious length"     6.000 Impervious length"     6.000 Impervious slope"     0.250 Pervious SLOPE"     0.250 Pervious SLOPE"     0.250 Pervious SLOPE"     0.373 Pervious Runoff coefficient"     0.373 Pervious Runoff coefficient"     0.100 Pervious SCS Curve No."     0.151 Impervious Manning 'n'"     98.000 Impervious SCS Curve No."     0.161 Impervious SCS Curve No."     0.813 Impervious Runoff coefficient"     0.101 Impervious SCS Curve No."     0.813 Impervious Runoff coefficient"     0.100 Impervious SCS Curve No."     0.813 Impervious Runoff coefficient"     0.100 Impervious SCS Curve No."     0.813 Impervious Initial abstraction"     0.009 0.000 0.006 0.006 c.m/sec"     Catchment 203 Pervious Impervious Total Area "     Surface Area 0.030 0.006 0.036 hectare"     Time of concentration 2.209 0.277 1.619 minutes"     Time to Centroid 103.765 87.859 98.908 minutes"     Rainfall depth 71.978 71.978 71.978 mm"     Rainfall volume 21.56 4.35 25.91 c.m"     Rainfall volume 21.56 4.35 25.91 c.m"     Rainfall losses 45.113 13.489 39.800 mm"     Runoff depth 26.865 58.488 32.178 mm"     Runoff coefficient 0.373 0.813 0.447 "     Maximum flow 0.005 0.004 0.009 c.m/sec"     40 HYDROGRAPH Add Runoff "</pre>	"	0.030	Pervious Area"				
<pre>6.000 Pervious slope" 9.006 Impervious Area" 3.100 Impervious length" 6.000 Impervious slope" 9.250 Pervious Manning 'n'" 75.000 Pervious SCS Curve No." 9.373 Pervious Runoff coefficient" 9.100 Pervious Ia/S coefficient" 9.001 Impervious SCS Curve No." 9.015 Impervious SCS Curve No." 9.016 Impervious SCS Curve No." 9.017 Impervious SCS Curve No." 9.018 Impervious SCS Curve No." 7 0.018 Impervious Initial abstraction" 9.009 0.000 0.006 0.006 c.m/sec" 7 Catchment 203 Pervious Impervious Iotal Area 7 Time of concentration 2.209 0.277 1.619 minutes" 7 Time to Centroid 103.765 87.859 98.908 minutes" 7 Time to Centroid 103.765 87.859 98.908 minutes" 7 Rainfall volume 21.56 4.35 2.5.91 c.m" 8 Rainfall losses 45.113 13.489 39.800 mm" 7 Runoff depth 26.865 58.488 32.178 mm" 7 Runoff depth 26.865 58.488 32.178 mm" 7 Maximum flow 0.005 0.004 0.009 c.m/sec" 40 HYDROGRAPH Add Runoff " 40 HYDROGRAPH Add Runoff " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine " 40 HYDROGRAPH Combine 1" 6 Combine % 40 HYDROGRAPH Combine 1" 6 Combine % 40 HYDROGRAPH Combine 1" 40 HYDRO</pre>	"	3.100	Pervious length"				
<pre>"     0.006 Impervious Area"     3.100 Impervious length"     6.000 Impervious slope"     0.250 Pervious Manning 'n'"     75.000 Pervious SCS Curve No."     0.373 Pervious Runoff coefficient"     0.100 Pervious Ia/S coefficient"     0.015 Impervious Initial abstraction"     0.015 Impervious SCS Curve No."     0.013 Impervious SCS Curve No."     0.013 Impervious SCS Curve No."     0.014 Impervious SCS Curve No."     0.015 Impervious SCS Curve No."     0.015 Impervious Runoff coefficient"     0.016 Impervious SCS Curve No."     0.017 Impervious SCS Curve No."     0.018 Impervious SCS Curve No."     0.018 Impervious SCS Curve No."     0.019 Impervious SCS Curve No."     0.019 Impervious Initial abstraction"     0.009 0.000 0.006 0.006 c.m/sec"     Catchment 203 Pervious Impervious Total Area "     Surface Area 0.030 0.006 0.036 hectare"     Time of concentration 2.209 0.277 1.619 minutes"     Time of concentration 2.209 0.277 1.619 minutes"     Rainfall depth 71.978 71.978 71.978 mm"     Rainfall volume 21.56 4.35 25.91 c.m"     Rainfall losses 45.113 13.489 39.800 mm"     Runoff depth 26.865 58.488 32.178 mm"     Runoff depth 26.865 58.488 32.178 mm"     Runoff coefficient 0.373 0.813 0.447 "     Maximum flow 0.005 0.004 0.009 c.m/sec"     40 HYDROGRAPH Add Runoff "</pre>	"	6.000	Pervious slope"				
<pre>3.100 Impervious length" 6.000 Impervious slope" 9.250 Pervious Manning 'n'" 75.000 Pervious SCS Curve No." 9.373 Pervious Runoff coefficient" 9.100 Pervious Ia/S coefficient" 9.010 Impervious Manning 'n'" 98.000 Impervious Manning 'n'" 98.000 Impervious SCS Curve No." 9.015 Impervious Manning 'n'" 98.000 Impervious SCS Curve No." 9.015 Impervious SCS Curve No." 9.015 Impervious SCS Curve No." 9.015 Impervious Runoff coefficient" 9.100 Impervious SCS Curve No." 9.015 Impervious Ia/S coefficient" 9.100 Impervious SCS Curve No." 9.009 0.000 0.006 0.006 c.m/sec" 9.1111 dastraction" 9.009 0.000 0.006 0.006 c.m/sec" 1.1111 dastraction" 9.000 0.000 0.006 0.006 c.m/sec" 1.1111 dastraction" 9.000 0.000 0.006 0.006 0.006 c.m/sec" 1.1111 1.11 1.111 1.111 1.111 1.111 1.</pre>	"	0.006	Impervious Area"				
<ul> <li>6.000 Impervious slope"</li> <li>0.250 Pervious Manning 'n'"</li> <li>75.000 Pervious SCS Curve No."</li> <li>0.373 Pervious Runoff coefficient"</li> <li>8.467 Pervious Initial abstraction"</li> <li>0.015 Impervious Manning 'n'"</li> <li>98.000 Impervious CSC Curve No."</li> <li>0.813 Impervious Runoff coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.813 Impervious SCS Curve No."</li> <li>0.100 Impervious Ja/S coefficient"</li> <li>0.100 Impervious SCS Curve No."</li> <li>0.813 Impervious Runoff coefficient"</li> <li>0.100 Impervious Ja/S coefficient"</li> <li>0.100 Impervious Ja/S coefficient"</li> <li>0.100 Impervious Ja/S coefficient"</li> <li>0.100 Impervious Initial abstraction"</li> <li>0.09 0.000 0.006 0.006 c.m/sec"</li> <li>Catchment 203 Pervious Impervious Total Area "</li> <li>Surface Area 0.030 0.006 0.006 0.036 hectare"</li> <li>Time of concentration 2.209 0.277 1.619 minutes"</li> <li>Time to Centroid 103.765 87.859 98.098 minutes"</li> <li>Time to Centroid 103.765 87.859 98.098 minutes"</li> <li>Rainfall depth 71.978 71.978 71.978 mm"</li> <li>Rainfall volume 21.56 4.35 25.91 c.m"</li> <li>Rainfall losses 45.113 13.489 39.800 mm"</li> <li>Runoff depth 26.865 58.488 32.178 mm"</li> <li>Runoff coefficient 0.373 0.813 0.447 "</li> <li>Maximum flow 0.005 0.004 0.009 c.m/sec"</li> <li>40 HYDROGRAPH Add Runoff "</li> <li>4 Add Runoff "</li> <li>0.009 0.009 0.009 0.006 0.006"</li> <li>40 HYDROGRAPH Combine 1"</li> <li>6 Combine 1"</li> <li>6 Combine 1"</li> <li>1 Node #"</li> <li>Controlled &amp; Uncontrolled"</li> </ul>	"	3.100	Impervious length"				
<pre>" 0.250 Pervious Manning 'n'" " 75.000 Pervious SCS Curve No." " 0.373 Pervious Runoff coefficient" " 0.100 Pervious Ia/S coefficient" " 0.1015 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.813 Impervious Manning 'n'" " 98.000 Impervious SCS Curve No." " 0.813 Impervious Runoff coefficient" " 0.100 Impervious Ia/S coefficient" " 0.009 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " "</pre>	"	6.000	Impervious slope"				
<pre>75.000 Pervious SCS Curve No." 0.373 Pervious Runoff coefficient" 0.100 Pervious Ia/S coefficient" 0.100 Pervious Manning 'n'" 98.000 Impervious Manning 'n'" 0.813 Impervious Runoff coefficient" 0.100 Impervious SCS Curve No." 0.813 Impervious Runoff coefficient" 0.100 Impervious Ia/S coefficient" 0.100 Impervious Ia/S coefficient" Catchment 203 Pervious Impervious Total Area " Catchment 203 Pervious Impervious Total Area " Surface Area 0.030 0.006 0.006 hectare" Time of concentration 2.209 0.277 1.619 minutes" Rainfall depth 71.978 71.978 71.978 mm" Rainfall losses 45.113 13.489 39.800 mm" Runoff depth 26.865 58.488 32.178 mm" Runoff depth 26.865 58.488 32.178 mm" Runoff coefficient 0.373 0.813 0.447 " Maximum flow 0.005 0.004 0.009 c.m/sec" 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 0.009 0.009 0.009 0.009 0.006 0.006" 40 HYDROGRAPH Combine 1" 6 Combine " 1 Node #" Controlled &amp; Uncontrolled" 4 Add Runotfolue 1" 6 Combine " 4 Other at the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of the term of term of the term of the term of ter</pre>	"	0.250	Pervious Manning '	า'"			
<pre>" 0.373 Pervious Runoff coefficient" " 0.100 Pervious Ia/S coefficient" " 3.467 Pervious Initial abstraction" " 0.015 Impervious SCS Curve No." " 0.813 Impervious Runoff coefficient" " 0.100 Impervious Ia/S coefficient" " 0.100 Impervious Initial abstraction" " 0.009 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.036 hectare" " Time to Centroid 103.765 87.859 98.908 minutes" " Rainfall depth 71.978 71.978 71.978 mm" " Rainfall losses 45.113 13.489 39.800 mm" " Runoff depth 26.865 58.488 32.178 mm" " Runoff depth 26.865 58.488 32.178 mm" " Runoff coefficient 0.373 0.813 0.447 " " Maximum flow 0.005 0.004 0.009 c.m/sec" " 40 HYDROGRAPH Add Runoff " 4 Add Ru</pre>		75.000	Pervious SCS Curve	No."			
<pre>" 0.100 Pervious Ia/S coefficient" " 8.467 Pervious Initial abstraction" " 0.015 Impervious SCS Curve No." " 98.000 Impervious SCS Curve No." " 0.813 Impervious Runoff coefficient" " 0.100 Impervious Initial abstraction" " 0.009 0.000 0.006 0.006 c.m/sec" " Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.036 hectare" " Time of concentration 2.209 0.277 1.619 minutes" " Time to Centroid 103.765 87.859 98.908 minutes" " Rainfall depth 71.978 71.978 71.978 mm" " Rainfall losses 45.113 13.489 39.800 mm" " Runoff depth 26.865 58.488 32.178 mm" " Runoff coefficient 0.373 0.813 0.447 " " Maximum flow 0.005 0.004 0.009 c.m/sec" " 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 4 Add Runoff " 4 Add Runoff " 5 Combine " 1 Node #" Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled" " Controlled &amp; Uncontrolled" " Controlled &amp; Uncontrolled" " Controlled * Uncontrolled"</pre>		0.373	Pervious Runoff coe	efficient"			
<pre>8.467 Pervious Initial abstraction" 9.015 Impervious Manning 'n'" 98.000 Impervious SCS Curve No." 0.813 Impervious Runoff coefficient" 0.100 Impervious Ia/S coefficient" 0.009 0.000 0.006 0.006 c.m/sec" Catchment 203 Pervious Impervious Total Area " Surface Area 0.030 0.006 0.036 hectare" Time of concentration 2.209 0.277 1.619 minutes" Time to Centroid 103.765 87.859 98.908 minutes" Rainfall depth 71.978 71.978 71.978 mm" Rainfall volume 21.56 4.35 25.91 c.m" Rainfall losses 45.113 13.489 39.800 mm" Runoff depth 26.865 58.488 32.178 mm" Runoff volume 8.05 3.54 11.58 c.m" Runoff coefficient 0.373 0.813 0.447 " Maximum flow 0.005 0.004 0.009 c.m/sec" 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 4 Add Runoff " 4 Add Runoff " 5 Copy to Outflow" 6 Combine 1" 6 Combine 1" 6 Combine 1" 6 Combine 1" 6 Controlled &amp; Uncontrolled" 5 Controlled &amp; Uncontrolled" 5 Controlled &amp; Uncontrolled" 5 Controlled &amp; Uncontrolled" 5 Controlled &amp; Uncontrolled" 5 Combine 1 5 Controlled &amp; Uncontrolled" 5 Controlled &amp; Uncontrolled 5 Controlled &amp; Uncontrolled 5 Controlled &amp; Uncontrolled 5 Controlled &amp; Uncontrolled</pre>	"	0.100	Pervious Ia/S coef	ficient"			
<pre> " " " " " " " " " " " " " " " " " " "</pre>	"	8.467	Pervious Initial a	ostraction"			
98.000       Impervious SCS Curve No."         98.000       Impervious Runoff coefficient"         0.100       Impervious Ia/S coefficient"         0.100       Impervious Initial abstraction"         0.518       Impervious Initial abstraction"         0.609       0.006       0.006 c.m/sec"         Catchment 203       Pervious Impervious Total Area "         Catchment 203       Pervious Impervious Total Area "         Time of concentration 2.209       0.277         1       Time of concentration 2.209       0.277         Rainfall depth       71.978       71.978         7       Rainfall depth       71.978         8       anifall volume       21.56       4.35         8       anifall losses       45.113       13.489       39.800         8       nunoff depth       26.865       58.488       32.178       mm"         8       Runoff coefficient       0.373       0.813       0.447       "         8       Copy to Outflow       0.005       0.004       0.009       c.m/sec"         40       HYDROGRAPH Add Runoff       "       0.009       0.009       0.006"         40       HYDROGRAPH Copy to Outflow"       0.009       0.009		0.015	Impervious Manning	'n'"			
0.813       Impervious Runoff coefficient"         0.100       Impervious Ia/S coefficient"         0.100       Impervious Initial abstraction"         0.518       Impervious Initial abstraction"         0.609       0.000       0.006       0.006 c.m/sec"         "       Catchment 203       Pervious       Impervious Total Area "         "       Surface Area       0.030       0.006       0.036       hectare"         "       Time of concentration 2.209       0.277       1.619       minutes"         "       Rainfall depth       71.978       71.978       mm"         "       Rainfall optime       21.56       4.35       25.91       c.m"         "       Rainfall losses       45.113       13.489       39.800       mm"         "       Runoff depth       26.865       58.488       32.178       mm"         "       Runoff coefficient       0.373       0.813       0.447		98.000	Impervious SCS Cury	ve No."			
<pre>0.100 Impervious Ia/S coefficient" 0.100 Impervious Ia/S coefficient" 0.518 Impervious Initial abstraction" 0.009 0.000 0.006 0.006 c.m/sec" Catchment 203 Pervious Impervious Total Area " Surface Area 0.030 0.006 0.036 hectare" Time of concentration 2.209 0.277 1.619 minutes" Time to Centroid 103.765 87.859 98.908 minutes" Rainfall depth 71.978 71.978 71.978 mm" Rainfall volume 21.56 4.35 25.91 c.m" Rainfall losses 45.113 13.489 39.800 mm" Runoff depth 26.865 58.488 32.178 mm" Runoff volume 8.05 3.54 11.58 c.m" Runoff coefficient 0.373 0.813 0.447 " Maximum flow 0.005 0.004 0.009 c.m/sec" 40 HYDROGRAPH Add Runoff " 4 Add Runoff " 4 Add Runoff " 4 Add Runoff " 4 O HYDROGRAPH Copy to Outflow" 8 Copy to Outflow" 40 HYDROGRAPH Combine 1" 40 pre>		0.813	Impervious Runoff	coefficient"			
0.518       Impervious Injtial abstraction"         0.009       0.000       0.006       0.006 c.m/sec"         "Catchment 203       Pervious       Impervious Total Area "         "Surface Area       0.030       0.006       0.036       hectare"         "Ime of concentration 2.209       0.277       1.619       minutes"         "Rinfall depth       71.978       71.978       mm"         Rainfall volume       21.56       4.35       25.91       c.m"         Rainfall losses       45.113       13.489       39.800       mm"         "Runoff depth       26.865       58.488       32.178       mm"         "Runoff coefficient       0.373       0.813       0.447       "         "Maximum flow       0.005       0.004       0.009       c.m/sec"         "40       HYDROGRAPH Add Runoff       "       4       Add Runoff       "         "5009       0.009       0.009       0.006"       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.009       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.009       0.006"         "40       HYDROGRAPH Combine       1       Node #"       "		0.100	Impervious Ta/S co	efficient"			
0.009         0.000         0.006         0.006         0.006         c.m/sec"           "Catchment 203         Pervious         Impervious Total Area         "           Surface Area         0.030         0.006         0.036         hectare"           "Ime of concentration         2.209         0.277         1.619         minutes"           "Ime to Centroid         103.765         87.859         98.908         minutes"           "Rainfall depth         71.978         71.978         71.978         mm"           "Rainfall losses         45.113         13.489         39.800         mm"           "Rainfall losses         45.113         13.489         39.800         mm"           "Runoff depth         26.865         58.488         32.178         mm"           "Runoff depth         26.865         3.54         11.58         c.m"           "Runoff coefficient         0.373         0.813         0.447         "           "Maximum flow         0.005         0.004         0.009         c.m/sec"           "40         HYDROGRAPH Add Runoff         "          0.009         0.006         .m/sec"           "40         HYDROGRAPH Copy to Outflow"         0.009		0.518	Impervious Initial	abstraction'	п		
<pre>" Catchment 203 Pervious Impervious Total Area " " Surface Area 0.030 0.006 0.036 hectare" " Time of concentration 2.209 0.277 1.619 minutes" " Time to Centroid 103.765 87.859 98.908 minutes" " Rainfall depth 71.978 71.978 71.978 mm" " Rainfall volume 21.56 4.35 25.91 c.m" " Rainfall losses 45.113 13.489 39.800 mm" " Runoff depth 26.865 58.488 32.178 mm" " Runoff volume 8.05 3.54 11.58 c.m" " Runoff coefficient 0.373 0.813 0.447 " " Maximum flow 0.005 0.004 0.009 c.m/sec" " 40 HYDROGRAPH Add Runoff " " 0.009 0.009 0.006 0.006" " 40 HYDROGRAPH Combine 1" " 6 Combine 1" " 1 Node #" " Controlled &amp; Uncontrolled"</pre>		01510	0.009 0.00	absel deciion a0 0.006	0,006	.m/sec"	
"       Surface Area       0.030       0.006       0.036       hectare"         "       Time of concentration       2.209       0.277       1.619       minutes"         "       Time to Centroid       103.765       87.859       98.908       minutes"         "       Rainfall depth       71.978       71.978       mm"         "       Rainfall volume       21.56       4.35       25.91       c.m"         "       Rainfall losses       45.113       13.489       39.800       mm"         "       Rainfall losses       45.113       13.489       39.800       mm"         "       Runoff depth       26.865       58.488       32.178       mm"         "       Runoff coefficient       0.373       0.813       0.447       "         "       Maximum flow       0.005       0.004       0.009       c.m/sec"         "       4       Add Runoff<"		C	atchment 203	Pervious	Impervious	Total Area	
Time of concentration 2.209       0.277       1.619       minutes"         Time to Centroid       103.765       87.859       98.908       minutes"         Rainfall depth       71.978       71.978       71.978       mm"         Rainfall depth       21.56       4.35       25.91       c.m"         Rainfall losses       45.113       13.489       39.800       mm"         Runoff depth       26.865       58.488       32.178       mm"         Runoff coefficient       0.373       0.813       0.447       "         Maximum flow       0.005       0.004       0.009       c.m/sec"         '' 4       Add Runoff "       ''       0.009       0.006       .m/sec"         '' 40       HYDROGRAPH Add Runoff "       ''       0.009       0.006       0.006"         '' 40       HYDROGRAPH Copy to Outflow"       ''       0.009       0.009       0.006"         '' 40       HYDROGRAPH Combine       1"       ''       6       Combine       1"         '' 40       HYDROGRAPH Combine       1"       ''       0.009       0.006"         '' 40       HYDROGRAPH       Combine       1"       ''       0.009       0.006"		S	urface Area	0.030	0.006	0.036	hectare"
Time of Contention 11010       1103.765       87.859       98.908       minutes"         Rainfall depth       71.978       71.978       71.978       mm"         "Rainfall volume       21.56       4.35       25.91       c.m"         "Rainfall losses       45.113       13.489       39.800       mm"         "Runoff depth       26.865       58.488       32.178       mm"         "Runoff volume       8.05       3.54       11.58       c.m"         "Runoff coefficient       0.373       0.813       0.447       "         "Maximum flow       0.005       0.004       0.009       c.m/sec"         "40       HYDROGRAPH Add Runoff "       4       Add Runoff "       0.009       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       0.009       0.009       0.006"       40         "40       HYDROGRAPH Combine       1"       6       Combine       1"         "6       Combine       1"       6       Combine       1"         "7       0.009       0.009       0.006"       1"         "8       Copy to Outflow"       1"       1       1         "9       0.009       0.009	п	T	ime of concentration	2,209	0.277	1,619	minutes"
Rainfall depth       71.978       71.978       71.978       mm"         Rainfall volume       21.56       4.35       25.91       c.m"         Rainfall losses       45.113       13.489       39.800       mm"         Runoff depth       26.865       58.488       32.178       mm"         Runoff volume       8.05       3.54       11.58       c.m"         Runoff coefficient       0.373       0.813       0.447       "         Maximum flow       0.005       0.004       0.009       c.m/sec"         ''       Maximum flow       0.005       0.006       c.m/sec"         ''       0.009       0.009       0.006       0.006"         ''       4       Add Runoff "       ''       0.009       0.006"         ''       0.009       0.009       0.006"       ''       ''         ''       0.009       0.009       0.006"       ''       ''         ''       0.009       0.009       0.006"       ''       ''         ''       0.009       0.009       0.006"       ''       ''         ''       0.009       0.009       0.006"       ''         ''       0.009		, T	ime to Centroid	103.765	87.859	98,908	minutes"
Rainfall volume       21.56       4.35       25.91       c.m"         Rainfall losses       45.113       13.489       39.800       mm"         Runoff depth       26.865       58.488       32.178       mm"         Runoff volume       8.05       3.54       11.58       c.m"         Runoff coefficient       0.373       0.813       0.447       "         Maximum flow       0.005       0.004       0.009       c.m/sec"         40       HYDROGRAPH Add Runoff       "       0.009       0.006       0.006"         40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         40       HYDROGRAPH Combine       1"       "       0.009       0.009       0.006"         40       HYDROGRAPH Combine       1"       0.009       0.009       0.006"       "         40       HYDROGRAPH Combine       1"       "       0.009       0.009       0.006"         "40       HYDROGRAPH Combine       1"       "       0.009       0.009       0.006"         "40       HYDROGRAPH       Combine	п	R		71 978	71 978	71.978	mm"
"Rainfall losses       45.113       13.489       39.800       mm"         "Runoff depth       26.865       58.488       32.178       mm"         "Runoff volume       8.05       3.54       11.58       c.m"         "Runoff coefficient       0.373       0.813       0.447       "         "Maximum flow       0.005       0.004       0.009       c.m/sec"         "40       HYDROGRAPH Add Runoff "       "       0.009       0.006       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         "40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         "40       HYDROGRAPH Combine       1"       1       0.009       0.009       0.006"         "40       HYDROGRAPH Combine       1"       1       0.009       0.009       0.006"         "40       HYDROGRAPH Combine       1"       1       0.009       0.009       0.006"         "40       HYDROGRAPH       Combine       1"       1       1       1         "40       HYDROGRAPH       Combine       1"       1       1       1         "40       HYDROGRAPH	 		aintall denth	/ 1 . // 0		/ /	
"       Runoff depth       26.865       58.488       32.178       mm"         "       Runoff volume       8.05       3.54       11.58       c.m"         "       Runoff coefficient       0.373       0.813       0.447       "         "       Maximum flow       0.005       0.004       0.009       c.m/sec"         "       Maximum flow       0.005       0.004       0.009       c.m/sec"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006"       "         "       0.009       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0       Combi	" "	R	aintall depth ainfall volume	21.56	4.35	25.91	c.m"
"       Runoff volume       8.05       3.54       11.58       c.m"         "       Runoff coefficient       0.373       0.813       0.447       "         "       Maximum flow       0.005       0.004       0.009       c.m/sec"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006       0.006"         "       4       Add Runoff "       "       0.009       0.006"       "         "       0.009       0.009       0.006       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"       "       "         "       0.009       0.009       0.006"	  	R	aintall depth ainfall volume ainfall losses	21.56	4.35	25.91	C.M" mm"
"       Runoff coefficient       0.373       0.813       0.447       "         "       Maximum flow       0.005       0.004       0.009       c.m/sec"         " 40       HYDROGRAPH Add Runoff "       "       0.009       0.006       0.006"         " 4       Add Runoff "       "       0.009       0.006       0.006"         " 40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         " 40       HYDROGRAPH Copy to Outflow"       "       0.009       0.009       0.006"         " 40       HYDROGRAPH Combine       1"       0.009       0.009       0.006"         " 40       HYDROGRAPH Combine       1"       1       Node #"       "         " 1       Node #"       "       Controlled & Uncontrolled"       "		R R R	ainfall depth ainfall volume ainfall losses unoff depth	21.56 45.113 26.865	4.35 13.489 58.488	25.91 39.800 32.178	C.m" mm" mm"
"Maximum flow       0.005       0.004       0.009       c.m/sec"         "40       HYDROGRAPH Add Runoff "         "40       Add Runoff "         "40       0.009       0.009       0.006         "40       HYDROGRAPH Copy to Outflow"         "8       Copy to Outflow"         "40       HYDROGRAPH Copy to Outflow"         "40       HYDROGRAPH Copy 0.009       0.009         "40       HYDROGRAPH Combine 1"         "6       Combine 1"         "1       Node #"         "2000       Controlled & Uncontrolled"		R R R R	ainfall depth ainfall volume ainfall losses unoff depth unoff volume	21.56 45.113 26.865 8.05	4.35 13.489 58.488 3.54	25.91 39.800 32.178 11.58	c.m" mm" mm"
"40       HYDROGRAPH Add Runoff "         "40       HYDROGRAPH Add Runoff "         "40       0.009       0.009       0.006         "40       HYDROGRAPH Copy to Outflow"         "40       HYDROGRAPH Copy to Outflow"         "40       HYDROGRAPH Copy 0.009       0.006"         "40       HYDROGRAPH Combine 1"         "6       Combine "         "1       Node #"         "2000000000000000000000000000000000000		R R R R R	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient	21.56 45.113 26.865 8.05 0.373	4.35 13.489 58.488 3.54 0.813	25.91 39.800 32.178 11.58 0.447	C.m" mm" mm" C.m"
4       Add Runoff "         9       0.009       0.006       0.006"         40       HYDROGRAPH Copy to Outflow"         8       Copy to Outflow"         0.009       0.009       0.009       0.006"         40       HYDROGRAPH Combine 1"       0.009       0.009       0.006"         40       HYDROGRAPH Combine 1"       0       0.009       0.009       0.006"         40       HYDROGRAPH Combine 1"       0       0.009       0.009       0.006"         1       Node #"       0       0.00111011011011011011011011011011011011		R R R R M	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow	21.56 45.113 26.865 8.05 0.373 0.005	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" "
"       0.009       0.009       0.006       0.006"         "       40       HYDROGRAPH Copy to Outflow"         "       8       Copy to Outflow"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.006"         "       0.009       0.009       0.009         "       0.009       0.009       0.009         "       <		R R R R М 40 н	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow VDROGRAPH Add Runoff	21.56 45.113 26.865 8.05 0.373 0.005	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" c.m" c.m/sec"
"40 HYDROGRAPH Copy to Outflow" "8 Copy to Outflow" "0.009 0.009 0.009 0.006" "40 HYDROGRAPH Combine 1" "6 Combine " "1 Node #" "Controlled & Uncontrolled"		R R R R 40 Н 40 Н	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff	21.56 45.113 26.865 8.05 0.373 0.005	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
"       8 Copy to Outflow"         "       0.009       0.009       0.006"         " 40       HYDROGRAPH       Combine       1"         " 6 Combine "       1       Node #"         " Controlled & Uncontrolled"		R R R R 40 H 40 H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0 009 0 00	21.56 45.113 26.865 8.05 0.373 0.005	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
" 0.009 0.009 0.009 0.006" " 40 HYDROGRAPH Combine 1" 6 Combine " 1 Node #" Controlled & Uncontrolled"		R R R R 40 40 40 40 40 40 40 40 40 40 40 40 40	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Conv to Out	21.56 45.113 26.865 8.05 0.373 0.005 " 0.006	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" c.m/sec"
"40 HYDROGRAPH Combine 1" "6 Combine " "1 Node #" "Controlled & Uncontrolled"		R R R 40 H 40 H 40 H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out	21.56 45.113 26.865 8.05 0.373 0.005 " 0.005	4.35 13.489 58.488 3.54 0.813 0.004	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" c.m/sec"
<pre>" 6 Combine " " 1 Node #" " Controlled &amp; Uncontrolled"</pre>		R R R 40 H 40 H 8	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow"	21.56 45.113 26.865 8.05 0.373 0.005 " 29 0.006 tflow"	4.35 13.489 58.488 3.54 0.813 0.004 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
" 1 Node #" " Controlled & Uncontrolled"		R R R 40 H 40 H 8 40 H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out 0.009 0.00	21.56 45.113 26.865 8.05 0.373 0.005 " 0.005 " 0.006 tflow" 0.009 1"	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
" Controlled & Uncontrolled"		R R R 40 H 40 H 8 40 H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine	21.56 45.113 26.865 8.05 0.373 0.005 " 0.006 tflow" 0.009 1"	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" c.m/sec"
		R R R 40 H 40 H 8 40 H 8 40 H 6	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine Combine "	21.56 45.113 26.865 8.05 0.373 0.005 " 0.006 tflow" 0.009 1"	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
		R R R 40 H 40 H 8 40 H 8 40 H 8	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine Combine " Node #"	21.56 45.113 26.865 8.05 0.373 0.005 " 29 0.006 tflow" 29 0.009 1"	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
" Hydrograph volume 70 495 c m"		R R R 40 H 40 H 8 40 H 8 40 H 6 1	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine Combine " Node #" Controlled & Uncont aximum flow	21.56 45.113 26.865 8.05 0.373 0.005 " 09 0.006 tflow" 09 0.009 1" trolled" 0 0.009	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"
		R R R 40 H 40 H 8 40 H 6 1 M H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine Combine " Node #" Controlled & Uncont aximum flow	21.56 45.113 26.865 8.05 0.373 0.005 " 09 0.006 tflow" 09 0.009 1" trolled" 0.03 1"	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006" 15 c.m/sc	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" c.m/sec"
		R R R 40 H 40 H 8 40 H 8 40 H 6 1 M H	ainfall depth ainfall volume ainfall losses unoff depth unoff volume unoff coefficient aximum flow YDROGRAPH Add Runoff Add Runoff " 0.009 0.00 YDROGRAPH Copy to Out Copy to Outflow" 0.009 0.00 YDROGRAPH Combine Combine " Node #" Controlled & Uncont aximum flow ydrograph volume	21.56 45.113 26.865 8.05 0.373 0.005 " 29 0.006 tflow" 29 0.009 1" 29 0.009 1" 29 0.009	4.35 13.489 58.488 3.54 0.813 0.004 0.006" 0.006" 15 c.m/sc 95 c.m"	25.91 39.800 32.178 11.58 0.447 0.009	c.m" mm" c.m" " c.m/sec"

"	40	HYDF	ROGRAPH	Confluence	1"		
"		7 (	Confluence	<u>ء</u> "			
"		1 1	Node #"				
"		(	Controlled	d & Uncontro	lled"		
"		Max	imum flow		0.015	c.m/sec"	
"		Hydr	rograph vo	olume	70.495	c.m"	
"		-	0.00	9 0.015	0.009	0.000"	
"	40	HYDF	ROGRAPH CO	py to Outfl	ow"		
"		8 (	Copy to Ou	utflow"			
"			0.00	9 0.015	0.015	0.000"	
"	38	STAF	RT/RE-STA	RT TOTALS 1"			
"		3 F	Runoff Tot	tals on EXIT	n		
"		Tota	al Catchme	ent area		0.148	hectare"
"		Tota	al Imperv:	ious area		0.088	hectare"
"		Tota	al % impe	rvious		59.168"	
"	19	EXI	Γ"				



# **Stormceptor Sizing**







City:FergusVearest Rainfall Station:WATERLOO WELLINGTON JClimate Station Id:6149387'ears of Rainfall Data:34	AP Project Numb Designer Nam Designer Com	er: 54925-100 e: Gaian Valdegamo	
Nearest Rainfall Station:WATERLOO WELLINGTONClimate Station Id:6149387Years of Rainfall Data:34	AP Designer Nam Designer Com	e: Gaian Valdegamo	
Climate Station Id: 6149387 Years of Rainfall Data: 34	Designer Com	NATE	
/ears of Rainfall Data: 34		pany: MIE	
	Designer Emai	l: gvaldegamo@mte	e85.com
	Designer Phor	ne: 519-743-6500	
ite Name: 750 St David St North	EOR Name:		
Drainage Area (ha): 0.11	EOR Company	:	
% Imperviousness: 72.70	EOR Email:		
Runoff Coefficient 'c': 0.73	EOR Phone:		
Particle Size Distribution: Fine		Net Annu	al Sediment
Target TSS Removal (%): 80.0		(TSS) Load	d Reduction
Required Water Quality Runoff Volume Capture (%):	90.00	Sizing	Summary
Estimated Water Quality Flow Rate (L/s):	3.07	Stormceptor	TSS Removal
 Oil / Fuel Spill Risk Site?	Yes	Model	Provided (%)
Instream Flow Control?	No	EFO4	97
		EFO6	100
	200	EFO8	100
Estimated Average Annual Sediment Load (kg/vr):	105	FFO10	100
Ectimated Average Annual Sediment Volume (I (vr):	85	FEO12	100
	05	1.012	100
	Recomme	nded Stormceptor EFC	D Model: EF
Estimat	ed Net Annual Sedin	nent (TSS) Load Reduc	tion (%): 🤤
	Water Qualit	ty Runoff Volume Cap	ture (%): >





### THIRD-PARTY TESTING AND VERIFICATION

► Stormceptor® EF and Stormceptor® EFO are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV Procedure for Laboratory Testing of Oil-Grit Separators and performance has been third-party verified in accordance with the ISO 14034 Environmental Technology Verification (ETV) protocol.

#### PERFORMANCE

► Stormceptor® EF and EFO remove stormwater pollutants through gravity separation and floatation, and feature a patentpending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including highintensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterwavs.

#### PARTICLE SIZE DISTRIBUTION (PSD)

► The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV *Procedure for Laboratory Testing of Oil-Grit Separators* for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

Particle	Percent Less	Particle Size	Dercent		
Size (µm)	Than	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		







Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.50	8.5	8.5	0.11	7.0	6.0	100	8.5	8.5
1.00	18.3	26.8	0.23	14.0	11.0	100	18.3	26.8
2.00	14.4	41.3	0.45	27.0	23.0	100	14.4	41.3
3.00	10.2	51.5	0.68	41.0	34.0	100	10.2	51.5
4.00	8.0	59.5	0.90	54.0	45.0	100	8.0	59.5
5.00	6.9	66.4	1.13	68.0	56.0	100	6.9	66.4
6.00	5.9	72.3	1.35	81.0	68.0	100	5.9	72.3
7.00	3.8	76.1	1.58	95.0	79.0	100	3.8	76.1
8.00	2.6	78.7	1.80	108.0	90.0	97	2.5	78.6
9.00	2.5	81.1	2.03	122.0	101.0	96	2.4	81.0
10.00	2.2	83.3	2.25	135.0	113.0	95	2.1	83.0
11.00	2.5	85.8	2.48	149.0	124.0	93	2.3	85.3
12.00	2.0	87.8	2.70	162.0	135.0	92	1.8	87.2
13.00	1.6	89.4	2.93	176.0	146.0	91	1.5	88.6
14.00	0.9	90.4	3.15	189.0	158.0	89	0.8	89.5
15.00	1.6	91.9	3.38	203.0	169.0	88	1.4	90.9
16.00	1.1	93.0	3.60	216.0	180.0	86	0.9	91.8
17.00	1.0	94.0	3.83	230.0	191.0	84	0.9	92.7
18.00	0.5	94.6	4.05	243.0	203.0	83	0.5	93.1
19.00	0.2	94.8	4.28	257.0	214.0	83	0.2	93.3
20.00	0.6	95.4	4.50	270.0	225.0	82	0.5	93.8
21.00	0.6	96.1	4.73	284.0	236.0	82	0.5	94.4
22.00	0.3	96.4	4.95	297.0	248.0	81	0.2	94.6
23.00	0.8	97.2	5.18	311.0	259.0	81	0.7	95.3
24.00	0.4	97.6	5.40	324.0	270.0	80	0.4	95.6
25.00	0.2	97.8	5.63	338.0	281.0	79	0.1	95.7
30.00	0.9	98.7	6.75	405.0	338.0	77	0.7	96.4
35.00	0.8	99.5	7.88	473.0	394.0	74	0.6	97.0
40.00	0.2	99.7	9.01	540.0	450.0	72	0.2	97.2
45.00	0.3	100.0	10.13	608.0	507.0	69	0.2	97.4
			Es	timated Ne	t Annual Sedim	ent (TSS) Loa	d Reduction =	97 %

Climate Station ID: 6149387 Years of Rainfall Data: 34











	Maximum Pipe Diameter / Peak Conveyance												
Stormceptor EF / EFO	ptor O Model Diameter		Model Diameter		Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inle Diame	et Pipe eter	Max Out Diame	let Pipe eter	Peak Cor Flow	nveyance Rate
(m) (ft)			(mm)	(in)	(mm)	(in)	(L/s)	(cfs)					
EF4 / EFO4	EF4 / EFO4 1.2 4		90	609	24	609	24	425	15				
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35				
EF8 / EFO8	EF8 / EF08         2.4         8           EF10 / EF010         3.0         10           EF12 / EF012         3.6         12		90	1219	48	1219	48	1700	60				
EF10 / EFO10			90	1828	72	1828	72	2830	100				
EF12 / EF012			90	1828	72	1828	72	2830	100				

#### SCOUR PREVENTION AND ONLINE CONFIGURATION

► Stormceptor® EF and EFO feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV Procedure for Laboratory Testing of Oil-Grit Separators, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

#### **DESIGN FLEXIBILITY**

► Stormceptor<sup>®</sup> EF and EFO offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

#### **OIL CAPTURE AND RETENTION**

► While Stormceptor<sup>®</sup> EF will capture and retain oil from dry weather spills and low intensity runoff, **Stormceptor<sup>®</sup> EFO** has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid reentrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.











#### **INLET-TO-OUTLET DROP**

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.

- $0^{\circ}$  45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.
- 45° 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

#### HEAD LOSS

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1. For submerged conditions the applicable K value is 3.0.

i onutant capacity												
Stormceptor EF / EFO	Moo Diam	Nodel ameter Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **		
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft³)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

#### **Pollutant Capacity**

\*Increased sump depth may be added to increase sediment storage capacity \*\* Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft<sup>3</sup>)

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment	Superior, verified third-party	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture	Proven performance for fuel/oil hotspot	Regulator, Specifying & Design Engineer,
and retention for EFO version	locations	Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection	Easy maintenance access from grade	Maintenance Contractor & Site Owner

#### STANDARD STORMCEPTOR EF/EFO DRAWINGS

For standard details, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

#### STANDARD STORMCEPTOR EF/EFO SPECIFICATION

For specifications, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef





#### STANDARD PERFORMANCE SPECIFICATION FOR "OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREATMENT DEVICE

#### PART 1 – GENERAL

#### 1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

#### 1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit Separators** 

#### 1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

#### PART 2 – PRODUCTS

#### 2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1 4 ft (1219 mm) Diameter OGS Units:

6 ft (1829 mm) Diameter OGS Units:

8 ft (2438 mm) Diameter OGS Units:

10 ft (3048 mm) Diameter OGS Units:

12 ft (3657 mm) Diameter OGS Units:

 $\begin{array}{l} 1.19 \ m^3 \ sediment \ / \ 265 \ L \ oil \\ 3.48 \ m^3 \ sediment \ / \ 609 \ L \ oil \\ 8.78 \ m^3 \ sediment \ / \ 1,071 \ L \ oil \\ 17.78 \ m^3 \ sediment \ / \ 1,673 \ L \ oil \\ 31.23 \ m^3 \ sediment \ / \ 2,476 \ L \ oil \\ \end{array}$ 

#### PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall







remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

#### 3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m<sup>2</sup> to 1400 L/min/m<sup>2</sup>, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m<sup>2</sup> and 1400 L/min/m<sup>2</sup> shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40  $L/min/m^2$  shall be assumed to be identical to the sediment removal efficiency at 40  $L/min/m^2$ . No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40  $L/min/m^2$ .

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m<sup>2</sup> shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m<sup>2</sup>, and shall be calculated using a simple proportioning formula, with 1400 L/min/m<sup>2</sup> in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m<sup>2</sup>.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

#### 3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**.

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m<sup>2</sup>.

#### 3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators,** with results reported within the Canadian ETV or ISO 14034 ETV verification. This reentrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to




### Stormceptor<sup>®</sup>EF Sizing Report

assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m<sup>2</sup> to 2600 L/min/m<sup>2</sup>) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.** However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.





















## CONSTRUCTION NOTES AND SPECIFICATIONS

1. GENERAL

- 1.1. THESE PLANS ARE NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY THE LOCAL MUNICIPALITY.
- 1.2. THESE PLANS ARE TO BE USED FOR SERVICING AND GRADING ONLY: ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THESE PLANS MUST NOT BE USED TO SITE THE PROPOSED BUILDING.
- 1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
- 1.4. THESE PLANS ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC. 1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:
- 1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS. LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL
- 1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.

DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.

- 1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.
- 1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.
- 1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL DAMAGED AND/OR DISTURBED PROPERTY WITHIN THE MUNICIPAL RIGHT-OF-WAY TO LOCAL MUNICIPALITY STANDARDS
- 1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WITH THE EXCEPTION OF WATERMAIN TAPPING, TO BE INSTALLED BY THE OWNER'S CONTRACTOR AT OWNER'S EXPENSE IN ACCORDANCE WITH THE LOCAL MUNICIPALITY'S "PROCEDURE FOR OFF-SITE WORKS BY PRIVATE CONTRACTOR". THE OWNER AND CONTRACTOR ARE TO ENSURE OFF-SITE WORKS PERMIT IS IN PLACE PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL AFFECTED PROPERTY TO ORIGINAL CONDITION, ALL BOULEVARD AREAS SHALL BE RESTORED WITH 150mm TOPSOIL AND SOD.
- 1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND THE REQUIREMENTS OF THE LOCAL MUNICIPALITY AND THE REGIONAL MUNICIPALITY OF WATERLOO; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.
- 1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
- 1.10. SANITARY AND STORM SEWERS AND SERVICES TO HAVE A MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS CONTACT DESIGN ENGINEER FOR "SEWER PIPE INSULATION DETAIL" IF REQUIRED.
- 1.11. PLAN TO BE READ IN CONJUNCTION WITH SWM REPORT AND DRAWING C1.1, C2.1, C2.2 AND C2.3 PREPARED BY MTE CONSULTANTS INC. AND LANDSCAPE PLAN.
- 1.12. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY FRYETT TURNER ARCHITECTS DATED APRIL 24, 2024 1.13. LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY MTE
- CONSULTANTS INC., DATED MAY 16, 2024. 1.14. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM PLAN PREPARED BY MTE CONSULTANTS INC, DATED MARCH 19, 2024
- 1.15. CONTRACTOR TO OBTAIN WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNER PRIOR TO ENTERING UPON NEIGHBOURING LANDS TO UNDERTAKE ANY WORK. COPIES OF THESE LETTERS OF CONSENT SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS FOR APPROVAL PRIOR TO ANY WORK BEING PERFORMED. FAILURE TO COMPLY WITH THE ABOVE IS AT CONTRACTOR'S OWN RISK.
- 1.16. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1 METRE FROM FOUNDATION WALL.
- 1.17. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUAL
- 1.18. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND
- 1.19. SIDE SLOPES OF ALL STOCKPILES OR EXTRACTION FACES TO BE MAINTAINED AT 70 DEGREES OR LESS BETWEEN EARLY APRIL AND LATE AUGUST TO DETER BANK SWALLOWS FROM NESTING.
- 1.20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 1.21. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
- 1.22. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN 4.6. WATERMAIN VALVES 100mmø AND LARGER SHALL BE AS PER ALL SEWER AND SERVICE TRENCHES.
- 1.23. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.
- 2. STORM SEWERS
- PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 2.2. STORM SEWERS 200mmø TO 375mmø SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 OR RIBBED PVC SEWER PIPE CSA B182.4-M90 ASTM-E794 WITH INTEGRAL BEL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.
- 2.3. FACTORY FABRICATED WYES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- 2.4. MANHOLES AND MANHOLE CATCHBASINS TO BE 1200mmø PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.
- 2.5. CATCHBASINS TO BE 600mm SQUARE PRECAST AS PER OPSD 705.010.
- 2.6. MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

- 2.7. STORM MANHOLE LIDS TO BE PER OPSD 401.010 TYPE 'B' CATCHBASIN AND CATCHBASIN MANHOLE GRATES TO BE PER OPSD 400.100. DITCH INLET CATCHBASIN GRATES TO BE PER OPSD 403.010
- 2.8. ADJUSTMENT UNITS FOR STORM STRUCTURES TO BE IN ACCORDANCE WITH OPSD 704.010 OR 704.011.
- 2.9. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED SEWER PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL COVER). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi) AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED FOUIVAI ENT.
- 2.10. UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM
- 2.11. ALL WEEPING TILE DRAINAGE TO BE PUMPED TO THE STORM 5. EROSION AND SEDIMENT CONTROL SEWER SYSTEM.
- SANITARY SEWERS
- 3.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 3.2. SANITARY SEWERS 200mmø TO 600mmø INCLUSIVE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
- 3.3. MANHOLES TO BE 1200mmø PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.
- 3.4. MANHOLES TO BE BENCHED PER OPSD 701.021.
- 3.5. SANITARY MANHOLE LIDS TO BE PER OPSD 401.010 TYPE 'A'.
- 3.6. MANHOLE FRAMES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.
- 3.7. ADJUSTMENT UNITS FOR SANITARY STRUCTURES TO BE IN ACCORDANCE WITH OPSD 704.010 OR 704.011.
- 3.8. FACTORY FABRICATED WYES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- 3.9. SANITARY SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi). AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPÁN HD-M28 OR OTHER ENGINEÈR-APPROVED EQUIVALENT.
- 3.10. CONTRACTOR RESPONSIBLE FOR TESTING OF SANITARY SEWERS 6.1. DURING THE COURSE OF CONSTRUCTION CONTRACTOR TO IN ACCORDANCE WITH OPSS 410.
- WATERMAINS
- 4.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 4.2. WATER SERVICE CONNECTIONS 50mmø AND SMALLER, SHALL BE TYPE "K" SOFT COPPER ASTM B88, ALUMINIUM COMPOSITE CSA B137.10, OR HDPE SERIES 160 AWWA C 901 WITH SERVICE SADDLE, COPPER SERVICE SHALL HAVE 5.5Kg ANODE.
- 4.3. WATERMAINS 100mmø AND LARGER SHALL BE PVC C900 CLASS 150 INSTALLED WITH MINIMUM 2.0 METRES OF COVER. FITTINGS 100mmø AND LARGER SHALL BE PVC CLASS 150 (DR18) CSA B137.3
- 4.4. WATERMAIN FITTINGS TO BE SUPPLIED WITH MECHANICAL JOINT RESTRAINTS. FOR WATERMAIN PIPE SIZES 150mmø OR LESS ALL PIPE JOINTS TO BE RESTRAINED WITHIN 5.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. FOR WATERMAIN PIPE SIZES GREATER THAN 150mmø ALL PIPE JOINTS TO BE RESTRAINED WITHIN 10.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. ALL TEES TO HAVE MINIMUM 2.0m SOLID PIPE LENGTH ON EACH RUN OF THE TEE, OR PROVIDE A THRUST BLOCK PER OPSD 1103.010.
- 4.5. ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE. PARTICULAR ATTENTION SHALL BE PAID TO ANODE INSTALLATION. CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF THE LOCAL MUNICIPALITY AND AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES.
- AWWA C509 MUELLER A2360-23 OR APPROVED EQUIVALENT (OPEN LEFT) INCLUDING VALVE BOX AND 2.3Kg ANODE INCLUDING ANODE PROTECTION INSTALLED PER LOCAL MUNICIPALITY STANDARDS.
- 4.7. PVC WATERMAIN SHALL HAVE TWU STRANDED COPPER, AWG8 TRACER WIRE STRAPPED TO TOP AT 5 METRE INTERVALS. TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT ALL HYDRANTS AND CAD WELDED TO THE LOWER FLANGE OF THE HYDRANT
- 4.8. MAIN STOPS, CURB STOPS AND COUPLINGS SHALL BE AWWA C-800 COPPER TO COPPER FLANGED OR COMPRESSION CONNECTION OR APPROVED EQUIVALENT.
- 4.9. SERVICE BOXES TO BE FERGUSON ECLIPSE TYPE FIGURE 222 SIZE NO. 9 OR APPROVED EQUIVALENT COMPLETE WITH ROD AND PLUG.
- 4.10. WATER CONNECTIONS MAY BE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500mm IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)(a)(i) OF THE ONTARIO BUILDING CODE.
- 4.11. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 2.0m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR WATER PIPE INSULATION DETAIL"

EQUIVALENT.

ANY WATERMAIN WORK).

5.2.

MINIMUM FROM PROPERTY LINE.

5.4

5.5.

5.8.

SITE EACH DAY.

MAINTENANCE RECOMMENDATIONS

AS REQUIRED. 6.2

THE HEIGHT OF THE FENCE. 6.3. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL

WORK

4.12. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 2.0m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "WATER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-3.52 (R20) INSULATING FACTOR (TYPICALLY 100-130mm). INSULÀTION BOARD WIDTH SHALL BE 2.4m FOR UP TO 200mm NOMINAL DIAMETER, 3.0m FOR 201mm-305mm DIAMETER. INSULATION BOARD SHALL BE INSTALLED WITH MINIMUM2-LAYERS, OVERLAPPED MINIMUM 300mm AT ALL JOINTS. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT) RIGID FPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME.ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED

4.13. ALL WATERMAIN TO BE PRESSURE TESTED IN ACCORDANCE WITH OPSS 441. DISINFECT ALL WATERMAIN IN ACCORDANCE WITH AWWA C 651-99 INCLUDING CHLORINATION, BACKFLOW PREVENTOR AND 24 HOUR DUPLICATE SAMPLING. ALL TESTING AND DISINFECTION TO BE COMPLETED UNDER THE SUPERVISION THE ENGINEER. (CONTRACTOR TO SUBMIT WATER COMMISSIONING PLAN IN ACCORDANCE WITH DGSSMS. THIS PLAN MUST BE APPROVED BY THE LOCAL MUNICIPALITY PRIOR TO

5.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE COVER.

ALL SEDIMENT CONTROL FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING. EXCAVATING OR DEMOLITION COMMENCING. 5.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES. ALL STOCKPILES TO BE KEPT 2.5m

EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.

CONSTRUCTION ACCESS (MUD MAT) TO BE PROVIDED ON-SITE AT ALL LOCATIONS WHERE CONSTRUCTION VEHICLES EXIT THE SITE. CONSTRUCTION ACCESS (MUD MAT) SHALL BE A MINIMUM OF 3.0m WIDE, 15.0m LONG (LENGTH MAY VARY DEPENDING ON SITE LAYOUT) AND 0.3m DEEP AND SHALL CONSIST OF 200mm CLEAR STONE MATERIAL OR APPROVED EQUIVALENT. PROPOSED EROSION FENCING TO TIE INTO MUD MAT. CONTRACTOR TO ENSURE ALL VEHICLES LEAVE THE SITE VIA THE MUD MAT AND THAT THE MAT IS MAINTAINED IN A MANNER TO MAXIMIZE EFFECTIVENESS AT ALL TIMES.

5.6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.

5.7. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.

NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE LOCAL MUNICIPALITY'S DEPARTMENT OF PUBLIC WORKS.

5.9. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE

5.10. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN, ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.

REMOVE SEDIMENT AND CONTAMINANTS FROM STORMWATER MANAGEMENT FACILITIES MONTHLY. FOLLOWING CONSTRUCTION CONTRACT COMPLETION, OWNER TO HIRE QUALIFIED CONTRACTOR TO REMOVE SEDIMENT AND CONTAMINANTS ANNUALLY AND REINSTATE STORMWATER MANAGEMENT FACILITIES ACCORDING TO THE DESIGN OUTLINED ON THIS PLAN,

EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3

STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS. THE PROPOSED STORMCEPTOR(STC) WILL REQUIRE REGULAR ANNUAL MAINTENANCE. OWNER TO ÉNTER INTO A MAINTENANCE AGREEMENT WITH A SUITABLE CONTRACTOR TO COMPLETE THIS

THE PROPOSED SNOUT/S WILL REQUIRE REGULAR MAINTENANCE DURING AND AFTER CONSTRUCTION IN ACCORDANCE WITH THE MAINTENANCE RECOMMENDATIONS OUTLINED IN SNOUT BES MANAGEMENT PRODUCTS INC. DOCUMENT. THIS INCLUDES BUT IS NOT LIMITED TO REMOVAL OF SEDIMENT FROM THE SUMP. REMOVAL OF FLOATABLES AND TRASH AND ANNUAL INSPECTION OF THE ANTI-SIPHON VENT. ACCESS HATCH AND TRASH SCREEN. OWNER TO ENTER INTO A MAINTENANCE AGREEMENT WITH A SUITABLE CONTRACTOR TO COMPLETE THIS WORK.



PERMANENT CONNECTION

# TYPICAL NEW WATERMAIN CONNECTION DETAIL



FOR SEWER PIPES HAVING LESS THAN 615mm COVER AND MINIMUM 470mm N.T.S.





- FROST DEPTH - PROTECT SOIL ZONE UNDER PIPE FROM FREEZING REFER TO OPSD 3400.011 FOR SPECIFIC LOCAL FROST DEPTH

PAVEMENT STRUCTURE (ASPHALT AND/OR GRANULAR), OR SELECT NATIVE MATERIAL AND TOPSOIL, AS SPECIFIED ON

GRANULAR 'A' BEDDING & BACK FILL BELOW AND ABOVE PIPE AND INSULATION BOARD, COMPACTED TO MINIMUM 95% SPMDD

RIGID EPS-INSULATION BOARD PER SPECIFICATION NOTES (MINIMUM R10-THICKNESS, TYPICALLY 50-65mm) NOTE: TRENCH SIDE-SLOPES IN AREAS OF PIPE INSULATION TO BE MAXIMUM 1:1 SLOPE, NO VERTICAL SECTIONS ALLOWED

UNLESS INDICATED IN DETAIL NATIVE SOILS - WHERE NATIVE SOIL IS SOFT AND/OR OF ORGANIC CONTENT. REMOVE TO DEPTH OF SUITABLE SOILS AND REPLACE WITH GRANULAR-B2 MATERIAL COMPACTED TO 95% SPMDD, OR CONSTRUCT IN ACCORDANCE WITH WRITTEN DIRECTION FROM

- FROST DEPTH - PROTECT SOIL ZONE UNDER PIPE FROM FREEZING REFER TO OPSD 3400.011 FOR SPECIFIC LOCAL FROST DEPTH

JPL 2024-05-| BY | үүүү–мм–с Engineers, Scientists, Surveyors 519-743-6500 **J.** P. LERCH 10016901 2024-05-29 OWNER 2587722 ONTARIO INC. 750 ST. DAVID STREET NORTH FERGUS PROJECT 750 ST. DAVID STREET NORTH FFRGUS ONTARIC DRAWING NOTES AND DETAILS PLAN Project Manager Project No. 54925-100 J.LERCH Design By Checked By GLV LEI Drawn By Checked By GLC LEI Surveyed By Drawing No. MTE

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Sheet **4** of

Date

Scale

Apr.23/24

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