STORMWATER MANAGEMENT PLAN

JOSHUA COURT SUBDIVISON

WEST LINCOLN

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RVL Homes

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March 2024

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REFERENCES

1. Stormwater Management Planning and Design Manual Ontario Ministry of Environment (March 2003)

STORMWATER MANAGEMENT PLAN

JOSHUA COURT SUBDIVISION

TOWN OF WEST LINCOLN

1.0 INTRODUCTION

1.1 Study Area

The proposed subdivision is located in the Township of West Lincoln as part of the hamlet settlement area of Allen Corners. The subject property is situated south of Young Street, north of Regional Road 20 and east of Grimsby Road (Regional Road 12). This Stormwater Management Plan has been prepared as part of the Draft Plan of Subdivision Process.

The area of the development is approximately 4.27 ha with 3.17 ha within the hamlet and is bound by agricultural lands to the east and existing single residential properties along the north and south boundaries. The drainage areas contributing to this stormwater management plan consist primarily of the subject lands and external northerly land. The receiving body of water for the proposed stormwater flows will be a Tributary of Twenty Mile Creek.

1.2 Objectives

The objectives of this study are as follows:

- 1. Establish specific criteria for the management of stormwater from this site.
- 2. Determine the impact of development on the stormwater peak flow & volume from this site.
- 3. Establish property requirements for the Stormwater Management Facility for the Draft Plan of Subdivision

1.3 Existing & Proposed Conditions

a) <u>Existing Conditions</u>

The subject land use is agricultural. The lands generally convey stormwater flows to either the Grimsby Road (Regional Road 12) roadside ditch or to a tributary of Twenty Mile Creek located at the southeast limits of the site. All flows are part of Twenty Mile Creek located south of the site.

b) Proposed Conditions

As part of the development, 6 residential lots will be created for rural single residential uses. A 0.13 hectare block (Block 7) is provided for Stormwater Management practices. As no sanitary sewer or watermain exists in proximity to the site, each dwelling will be constructed with an associated individual private septic system and water system. Roadside ditches will provide drainage for the roadway conveying flows easterly to Block 7.

2.0 STORMWATER MANAGEMENT CRITERIA

New developments are required to provide stormwater management in accordance with provincial and municipal policies including:

- Stormwater Quality Guidelines for New Development (MECP/MNRF, May 1991)
- Stormwater Management Planning and Design Manual (MECP, March 2003)

Based on the above policies and site specific considerations, the following stormwater management criteria have been established for this site.

- The drainage areas of the development direct stormwater to a tributary of Twenty Mile Creek with an MNR Type 2 habitat watercourse. Therefore, Stormwater **quality** controls require MECP Normal Protection to the stormwater before discharging to the Twenty Mile Creek Tributary.
- Stormwater **quantity** controls are to be provided for the outlet to limit the proposed development peak flows from the 5 and 100 year storm events to existing peak flow levels

3.0 STORMWATER ANALYSIS

A stormwater analysis of the Joshua Court Subdivision development has been prepared using the MIDUSS computer modelling program. A stormwater analysis was conducted to represent the existing and proposed conditions to the various site stormwater outlets.

This program was selected because it is applicable to an urban drainage area like the study area, it is relatively easy to use and modify for the proposed drainage conditions and control facilities, and it readily allows for the use of design storm hydrographs for the various return periods being investigated. Copies of the current model output files are enclosed in Appendix B.

3.1 Design Storms

Design storm hydrographs were developed using a Chicago distribution based on the Intensity-Duration-Frequency curves for the development area in West Lincoln. Hydrographs for the 25mm, 5, and 100 year events were developed using a 4 hour Chicago distribution. Table 1 summarizes the rainfall data.

Table 1. Rainfall Data					
Design Storm	Chi	neters			
(Return Period)	a	b	c		
25mm	512.000	6.000	0.800		
5 Year	3175.000	20.000	1.000		
100 Year	6300.000	15.000	1.000		
Intensity $(mm/hr) = \frac{a}{(t_d + b)^c}$					

3.2 Existing Conditions

The existing conditions were modelled to establish the stormwater peak flows and volumes prior to development within this site. The existing drainage areas for the subject lands are shown in Figure 1 outlining the various drainage areas to 4 separate stormwater outlets. These areas were determined from field investigations and a combination of topographic surveys and topographic information from the Regional Niagara DTM.

Outlet A contains the stormwater directed to the Grimsby Road (Regional Road 12) roadside ditch, and is represented by Drainage Area EX2. Outlet B comprises of the stormwater that outlets at the southeast portion of the site through an existing ditch and includes drainage area EX4. Outlet C comprises of the stormwater that outlets at the northeast corner of the site and the tributary of Twenty Mile Creek that crosses through the northeast corner of the site. This outlet includes Drainage Areas EX1 and EX3. Outlet D contains the tributary of Twenty Mile Creek prior to entering the site. Drainage Area EX1 represents the entire drainage area for the tributary for Twenty Mile Creek from the start of the watercourse to Outlet D where it enters the subject lands. Outlet E represents the combination of stormwater from Outlets B and C, that converge southeast of the site.

All stormwater flows from the development site are ultimately conveyed southerly and converge with the tributary of Twenty Mile Creek. Table 3 details the stormwater peak flows generated by the various design storm events.

3.3 **Proposed Conditions**

The future drainage areas for the proposed development, shown in Figure 2, were modelled to establish the stormwater peak flows once development has been completed at the proposed site. The proposed development will continue to discharge stormwater flows at allowable levels.

Stormwater flows as part of Drainage Area A10 will be directed to the roadside ditch on Grimsby Road (Regional Road 12) outletting at Outlet A. Outlet B will contain Drainage Areas A20, A30, A40 and A70. Drainage areas A30 and A40 will be conveyed through the proposed roadside ditches, Drainage Area A20 will be directed through a series of rear yard swales and Drainage Area A70 will drain directly to Outlet B. Outlet C will contain Drainage Areas A50, A60 and A80. Drainage Areas A50 and A60 will be directed through a series of rear yard swales that will outlet at Outlet C. Drainage Area A80 contains the entire drainage area for the tributary of Twenty Mile Creek before entering the site at Outlet D.

It is proposed to redirect 100m of the tributary of Twenty Mile Creek that crosses the northeast corner of the site between Outlet D to Outlet C. The channel will be redirected to flow easterly directly behind Blocks 5 and 6, and will converge with the proposed-on site ditch in Block 5 at the northeast corner of the site.

Input parameters for the computer model with the proposed development conditions are shown in Table 2. The impervious values for each drainage area have been estimated based on the existing and future land uses with calculations included in Appendix A.

	Table 2. Hydrologic Parameters						
Area No.	Area (ha)	Length (m)	Slope (%)	SCS CN	Percent Impervious		
t	Existing Conditions						
EX1	19.77	363	0.5	74	7.9		
EX2	0.42	53	0.5	74	42.6		
EX3	2.23	122	0.5	74	5.6		
EX4	2.29	123	0.5	74	3.8		
	24.71	Total Area			1		
		Futi	ire Conditions				
A10	0.45	55	0.5	74	40.7		
A20	1.59	103	1.0	74	7.5		
A30	0.39	51	0.5	74	35.1		
A40	0.37	47	0.5	74	39.5		
A50	1.39	92	1.0	74	10.6		
A60	0.36	49	1.0	74	5.4		
A70	0.39	51	0.5	74	6.2		
A80	19.77	363	0.5	74	7.9		
	24.71	Total Area		· 			

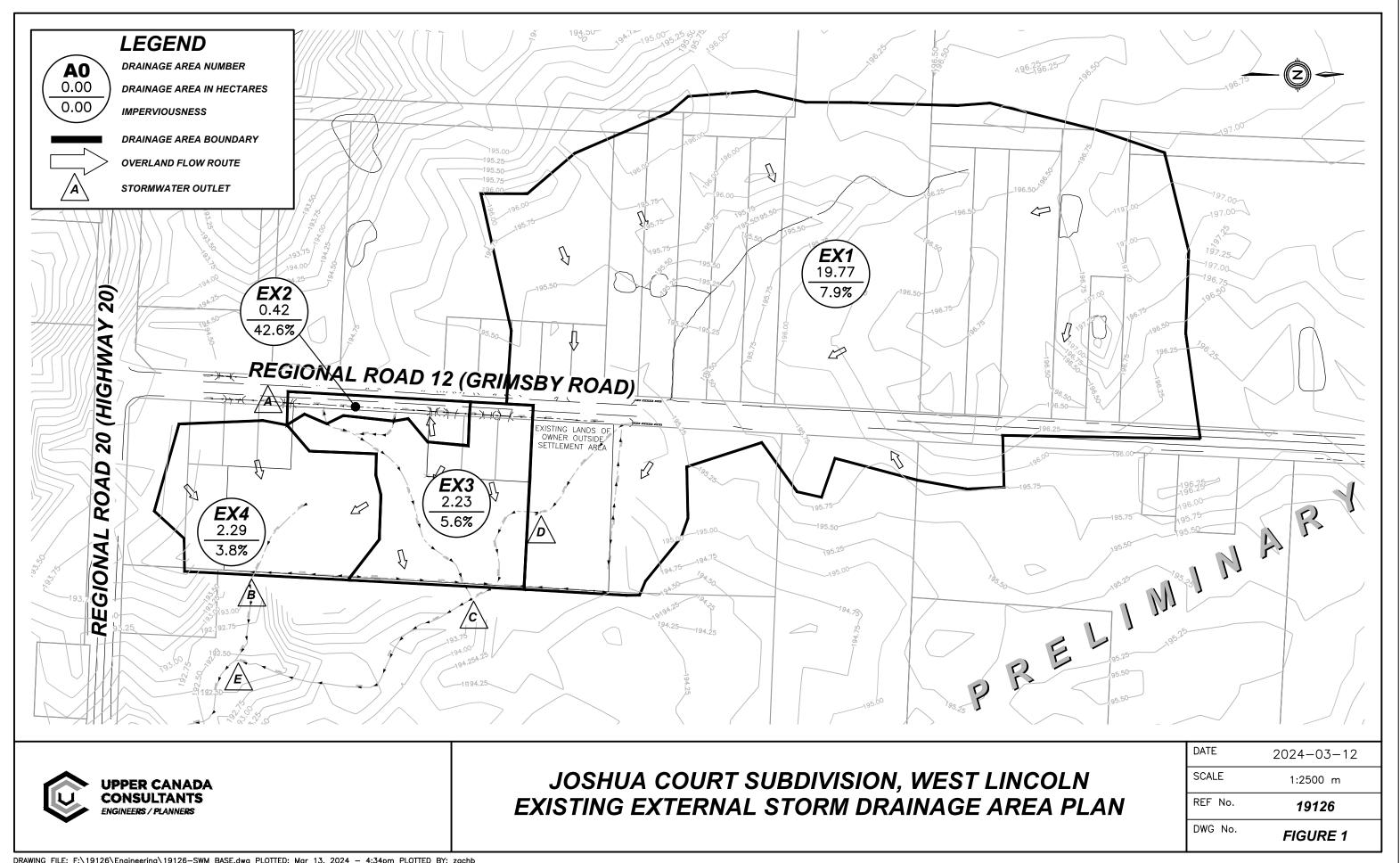
The results of the modelling are shown in Table 3, where the peak flows were calculated for the 5 and 100 year design storm events.

Design		Peak Flow (m ³ /s)
Storm	Existing	Future*	Change
		Outlet A	
5 Year	0.040	0.041	+2.50%
100 Year	0.109	0.112	+2.75%
Ŀ	·	Outlet B	
5 Year	0.040	0.098	+145.00%
100 Year	0.245	0.395	+61.22%
·	•	Outlet C	
5 Year	0.376	0.385	+2.39%
100 Year	1.449	1.357	-6.35%
		Outlet D	
5 Year	0.340	0.340	0%
100 Year	1.270	1.270	0%
		Outlet E	
5 Year	0.403	0.481	+19.35%
100 Year	1.649	1.717	+4.12%

For the purpose of Table 3, the total peak stormwater flow values discharging to Outlet E is the confluence of peak flows from Outlet B and C that converge east of the subject lands. The future peak flows from the site have been calculated and outlined in this table to provide conclusions regarding the necessity of quantity controls.

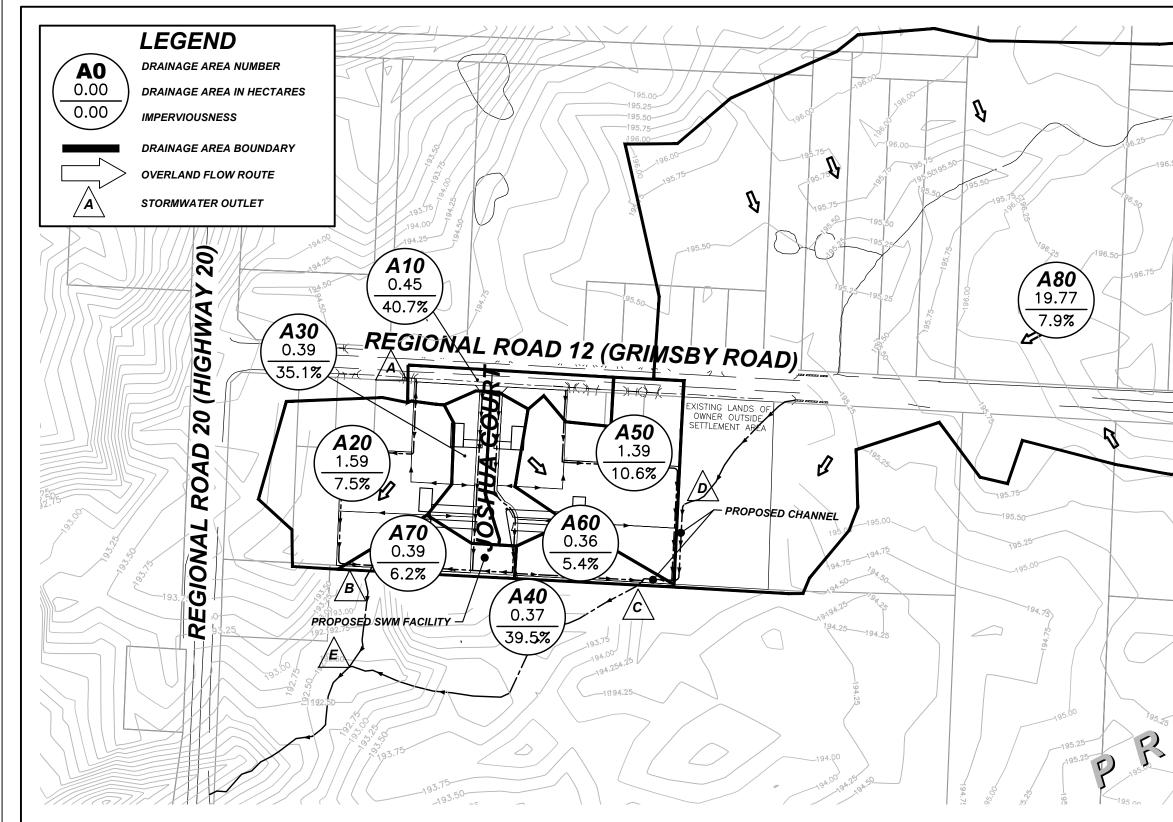
As seen in Table 3, the change in stormwater flows at Outlet A and C are negligible during all modelled storm events. However, peak stormwater flows at Outlet B are greatly increased under proposed conditions and stormwater quantity controls will be required. By controlling stormwater flows at Outlet B, the stormwater flows at Outlet E will be reduced.

It is proposed to construct a Dry Pond Stormwater Management Facility within Block 7 to provide the necessary quantity controls to restrict peak stormwater flows to allowable levels prior to discharge from the site. The quantity controls will ensure that the combined future peak stormwater flows discharging to Outlet B from Drainage Areas A20, A30, A40, and A70 will be reduced to allowable levels outlined by Drainage Area EX4.





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JOSHUA COURT SUBDIVISION, WEST LINC PROPOSED EXTERNAL STORM DRAINAGE ARE

	_	— ((z)) ~
196.50		
	97.00	197.00 197.00
		197.25 197.00
196.75 91.00	196.75	196.75 196.50
196.50	196.50 196.25	1.96
196.50	196.25	
196.25	6.00	
195.75	19	6.25 6.00
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4.0 STORMWATER MANAGEMENT PLAN

A MIDUSS model was created to assess existing, future and ultimate development peak flows by the proposed subdivision. The stormwater management facility was sized according to MECP Guidelines (MECP, March 2003) as follows:

4.1 Stormwater Quantity Control

As stated previously through conclusions provided from Table 3, stormwater flows discharging to Outlets A and C have a minimal increase compared to existing conditions and quantity controls will not be required. Drainage Area A70 will provide quantity controls to ensure that the combined future peak stormwater flows discharging to Outlet B from Drainage Areas A20, A30, and A40 will be reduced to allowable levels outlined by Drainage Area EX4. Stormwater flows at Outlet E that contain the flows from Outlet B and C will be analysed to ensure the flows are reduced to allowable levels outlined by Drainage Areas EX1, EX3 and EX4.

A Dry Pond located at the east portion of the site in Block 7 will provide the necessary controls to reduce peak flows to allowable levels.

4.1.1 Stormwater Management Facility Configuration

The layout of the stormwater management facility is providing a single outlet at Outlet B, prior to converging with the tributary of Twenty Mile Creek. A dry pond will be located 80 meters north of the outlet and a 600mm diameter pipe slopped at 0.1% will provide an outlet for the dry pond and convey flows to Outlet B. The swale at the southeast corner of the property will provide additional storage. A retaining wall will be constructed beginning at the south side of Outlet B and follow the property line along the rear yard swale in Lot 4 at an elevation of 194.00m to ensure water does not spill over onto the adjacent properties during stormwater controlled events.

To provide the required quantity controls, it is proposed to construct a two-stage headwall at Outlet B. The headwall will have a 0.050m wide slot weir from the base elevation of 192.52m. At an elevation of 193.25m to an elevation of 194.00m at the top of the headwall, the slot weir will increase to 0.2m wide. This will act as an emergency overflow weir to allow stormwater flow to discharge at greatly increased rates during extreme storm events. Storage will be provided by the proposed dry pond, a 600mm diameter pipe that connects the dry pond to the headwall and the southern area of Block 7 swale in Drainage Area A20. See Appendix A for the storage calculations provided by the dry pond and rear yard swale in Drainage Area A20.

Table 4 below outlines the stormwater characteristics experienced by the Stormwater Management Dry Pond Facility during the modelled storm events. Based on the configuration of the facility, a storage volume of approximately 1043.08m³ will be provided for stormwater management. See Appendix A for the Stage Storage Discharge Calculations.

Table 4. Stormwater Management Facility Characteristics							
	Peak Flows (L/s)		Maximum	Maximum			
Design Storm	Inflow	Outflow	Elevation (m)	Volume (m ³)			
5 Year	95	39	193.07	215			
100 Year	391	211	193.66	654			

Therefore, stormwater within the facility will reach a maximum elevation of 193.66m during the 100-year design storm event. Stormwater levels during all modelled storm events will remain below the overflow weir elevation of 194.00m. A freeboard of 0.34m will be experienced by the dry pond during the 100 year event.

4.1.2 (Outlet B and E) Flow Comparison

The combined peak stormwater flows discharging to Outlet B from Drainage Areas A20, A30, A40 and A70 are outlined in Table 5 below.

Table 5. Outlet B - Peak Stormwater Flows						
Design StormExisting Peak Flows (L/s)*Future Peak Flows (L/s)Percent Char						
5 Year	40	39	-2.50%			
100 Year 245 211 -13						
Note: * Represents future stormwater conditions with stormwater quantity controls						

Therefore, peak stormwater flows at Outlet B will be reduced to less than existing levels under the proposed Stormwater Management Plan.

The combined peak stormwater flows discharging to Outlet E contains the flows from Outlets B and C (Drainage Areas A20, A30, A40, A50, A60, A70 and A80), is outlined in Table 6 below.

Table 6. Outlet E - Peak Stormwater Flows						
Design Storm	Existing Peak Flows (L/s)	*Future Peak Flows (L/s)	Percent Change			
5 Year	403	400	-0.74%			
100 Year	1649	1569	-4.85%			

Note: * Represents future stormwater conditions with stormwater quantity controls

Therefore, peak stormwater flows at Outlet E will be reduced to less than existing levels under the proposed Stormwater Management Plan.

4.2 Stormwater Quality Control

The Township of West Lincoln as well as the Regional Niagara require the development to provide stormwater quality enhancements to Normal Protection levels prior to discharge from the site. The majority of the development site, particularly all of Drainage Areas A10, A20, A50, A60, and A70 will consist of rear yards and roof top areas that is considered clean stormwater. The driveways and main roadway area within the site will be the sole significant source of contaminates with the development. It is proposed to utilize the roadside ditches to provide the necessary quality controls for the proposed subdivision.

All stormwater from the roadway and driveways within Drainage Area A30 and A40 will be directed to the proposed roadside ditches. The ditches will ultimately convey stormwater flows to the Dry Pond facility prior to discharge from the site. Drainage Area A30 outlines the drainage area for the south roadside ditch and Drainage Area A40 relates to the north roadside ditch.

The ditches will be designed in accordance with the MECP SWM Planning and Design Manual (2003) to provide the necessary water quality enhancements. Grassed swales designed for water quality treatment should be designed to convey peak stormwater flows during a 4 hour 25mm storm at a velocity of less than 0.5 m/s.

An analysis of the 25mm storm has been completed to model the expected stormwater characteristics in the roadside ditches.

Table 7. Roadside Ditch Stormwater Characteristics					
Draina	ge Areas		Roadsi	de Ditch	
No.	Area (ha)	Slope (%)	Depth of Flow (m)	Flow Rate (m ³ /s)	Velocity (m/s)
A30	0.39	0.5	0.1	0.012	0.27
A40	0.37	0.5	0.1	0.013	0.27

Table 7 below outlines the stormwater characteristics of the roadside ditches utilized within the MIDUSS modelling as well as conclusions observed.

As shown in Table 7, the stormwater peak flows and velocities within the proposed roadside ditches will be less than 0.5m/s. Therefore, the internal roadside ditches (Enhanced Swales) will provide sufficient quality enhancements for stormwater discharging from the site.

4.3 Northerly Swale Relocation

As stated previously, it is proposed to redirect 100m of the tributary of Twenty Mile Creek that crosses the northeast corner of the site between Outlet D to Outlet C. The channel will be redirected to flow easterly directly behind Blocks 5 and 6, and will converge with the proposed-on site ditch in Block 5 at the northeast corner of the site. The redirected portion of the channel has been designed to accommodate the 5 year design storm event in Drainage Area A80. The redirected channel will be 0.5 meters deep, 1.2 meters wide at the bottom, and have 3:1 side slopes.

5.0 STORMWATER MANAGEMENT FACILITY MAINTENANCE

5.1 Dry Pond Facility

The dry detention stormwater management facility for this development may be subject to frequent wetting and deposition of sediments as a result of frequent low intensity storm events. The purpose of the dry detention area is to detain peak flows to existing levels. For the initial operation period of the stormwater management facility, the required frequency of maintenance is not definitively known and many of the maintenance tasks will be performed on an 'as required' basis. For example, during the construction phase of the development, there will be a greater potential for increased maintenance frequency, which depends on the maintenance of the upstream oil/grit separator and the effectiveness of the sediment and erosion control techniques employed.

Inspections of the dry detention areas will indicate whether or not maintenance is required. Inspections should be made after every significant storm during the first two years of operation or until all development is completed to ensure the dry detention area is functioning properly. This may translate into an average of six inspections per year. Once all building activity is finalized, inspections shall be performed annually.

The following points should be addressed during inspections of the facility.

Standing water above at the headwall outlet above the base a day or more after a storm may indicate a blockage in the control structure. The blockage may be caused by trash or sediment and a visual inspection would be required to determine the cause.

The dry detention area has been created by excavating a detention area and the integrity of the embankment should be periodically checked to ensure that the side slopes have not sloughed.

Trash removal is an integral part of maintenance and annual clean up, usually in the spring, is a minimum requirement. After this, trash removal is performed on an as required basis on observation of trash build-up during inspections.

Grass cutting is a maintenance activity that is done solely for aesthetic purposes. It is recommended that grass cutting by limited to the upper embankment areas. It should be noted that municipal by-laws may require regular grass maintenance for weed control.

5.2 Internal Roadside Ditches (Enhanced Swales)

For the proposed internal roadside ditches, very minor maintenance will be required. In order to provide optimal enhancement measures, it is suggested that the swales maintain moderately overgrown conditions. Per the MECP Guidelines, grass should be allowed to grow higher than 75mm to enhance the filtration of suspended solids. Regular trimming (i.e. mowing) of the conveyance swales could potentially conclude in adverse effects and will prevent the swales from operating as intended. Frequent inspections should be conducted during the first year of operation and annually during spring to ensure a build-up of sediment does not occur.

6.0 CONCLUSIONS AND RECOMMENDATIONS

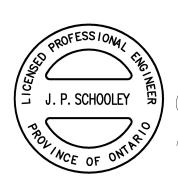
Therefore, based on the above comments and design calculations provided for this site, the following summarizes the stormwater management plan for this site.

- 1. Stormwater quality improvements will be provided to Normal Protection by the proposed roadside ditches along Joshua Court, which function as grassed swales in accordance with MECP guidelines.
- 2. Quantity controls will be provided by the proposed two stage headwall and storage will be provided by the dry pond, a 600mm diameter pipe conveying flows from the dry pond to the headwall and the rear yard swale located in the southeast corner of the site to control the 5 and 100 year storm events to existing conditions.
- 3. The tributary of Twenty Mile Creek that crosses the northeast corner of the site will be redirected to flow easterly directly behind Blocks 5 and 6, and will converge with the proposed-on site ditch in Block 5 at the northeast corner of the site.

We trust the above comments and enclosed calculations are satisfactory for approval. If you have any questions or require additional information, please do not hesitate to contact our office.

Prepared By:

Zach Barber, E.I.T.



Reviewed By:

Jason Schooley, P.Eng. Revised March 13, 2024

APPENDICES

APPENDIX A

Weighted Impervious Calculation Sheet Dry Pond Stage-Storage-Discharge Calculations Dry-Pond Volume Calculations A20 Rear Yard Swale Volume Calculations

Weighted Imperviousne	ss Percentage Calcu	lation Worksheet	
Project Name: Project Number: Date: Person:	Joshua Court Subdivision 19126 February 23, 2024 Zach Barber		
EX - EXISTING CONDITIONS			
EX1	Footprint	% Impervious	Effective Impervious Area
Evisión y Devisión y Arabalt Dandard Driveren	45004.52	400.00/	4500452
Existing Buildings, Asphalt Road and Driveways	15364.5 m ² 182319.6 m ²	100.0% ea	15364.5 m ² 182.3 m ²
Landscape/Greenspace	182319.6 m	0.1% ea	182.3 m
TOTAL CATCHMENT IMPERVIOUS AREAS			15,547 m ²
TOTAL CATCHMENT AREA			197,684 m ²
	EFFECTIVE WEIGHTED CAT	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	7.9 % 0.26
EX - EXISTING CONDITIONS			
EX 2	Footprint	% Impervious	Effective Impervious Area
Existing Buildings, Asphalt Road and Driveways	1787.995 m ²	100.0% ea	1788.0 m ²
Landscape/Greenspace	2411.8 m ²	0.1% ea	2.4 m^2
Lanuscape/Oreenspace	2411.0 11	0.170 ea	2.4 111
TOTAL CATCHMENT IMPERVIOUS AREAS			1,790 m ²
TOTAL CATCHMENT AREA			4,200 m ²
	EFFECTIVE WEIGHTED CAT		42.6 %
		RUNOFF COEFFICIENT	0.50
EX - EXISTING CONDITIONS			
EX3	Footprint	% Impervious	Effective Impervious Area
Existing Buildings, Asphalt Road/Parking Areas & Concrete			
Apron.	1237.239 m ²	100.0% ea	1237.2 m ²
Landscape/Greenspace	21049.6 m ²	0.1% ea	21.0 m ²
			2
TOTAL CATCHMENT IMPERVIOUS AREAS			1,258 m ²
TOTAL CATCHMENT AREA			22,287 m ²
	EFFECTIVE WEIGHTED CAT	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	5.6 % 0.24
EX - EXISTING CONDITIONS			
EX4	Footprint	% Impervious	Effective Impervious Area
Existing Buildings, Asphalt Road/Parking Areas & Concrete			
Apron.	857.3 m ²	100.0% ea	857.3 m ²
Landscape/Greenspace	22023.6 m ²	0.1% ea	22.0 m ²
			070 2
TOTAL CATCHMENT IMPERVIOUS AREAS			879 m^2
TOTAL CATCHMENT AREA			22,881 m ²
	EFFECTIVE WEIGHTED CAT	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	3.8 % 0.23

Weighted Imperviou	sness Percentage Calcu	lation Worksheet	
Project Name:	Joshua Court Subdivision		
Project Number:	19126		
Date:	February 23, 2024		
Person: PROP - PROPOSED CONDITIONS	Zach Barber		
A10	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	40.6 m ²	100.0% ea	40.6 m ²
Existing Buildings, Asphalt Road and Driveways	1788.0 m ²	100.0% ea	1788.0 m ²
Landscape/Greenspace	2669.2 m ²	0.1% ea	2.7 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS TOTAL CATCHMENT AREA			1,831 m ² 4,498 m ²
	EFFECTIVE WEIGHTED CATC	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	40.7 % 0.49
PROP - PROPOSED CONDITIONS			
A20	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	312.7 m ²	100.0% ea	312.7 m ²
Existing Buildings, Asphalt Road and Driveways	857.3 m ²	100.0% ea	857.3 m ²
Landscape/Greenspace	14696.2 m ²	0.1% ea	14.7 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS TOTAL CATCHMENT AREA			1,185 m ² 15,866 m ²
	EFFECTIVE WEIGHTED CATC	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	7.5 % 0.25
PROP - PROPOSED CONDITIONS A30	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	1353.0 m ²	100.0% ea	1353.0 m ²
Existing Buildings, Asphalt Road and Driveways	0.0 m ²	100.0% ea	0.0 m ²
Landscape/Greenspace	2513.7 m ²	0.1% ea	2.5 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			1,356 m ²
TOTAL CATCHMENT AREA			3,867 m ²
	EFFECTIVE WEIGHTED CATC	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	35.1 % 0.45
PROP - PROPOSED CONDITIONS	Footprint	9/ Imponious	
A40	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	1472.7 m ²	100.0% ea	1472.7 m ²
Existing Buildings, Asphalt Road and Driveways	0.0 m ²	100.0% ea	0.0 m ²
Landscape/Greenspace	2258.4 m ²	0.1% ea	2.3 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			1,475 m ²
TOTAL CATCHMENT AREA			3,731 m ²
	EFFECTIVE WEIGHTED CATC	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	
PROP - PROPOSED CONDITIONS A50	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	233.1 m ²	100.0% ea	233.1 m ²
Existing Buildings, Asphalt Road and Driveways	233.1 m 1237.2 m ²	100.0% ea 100.0% ea	233.1 m 1237.2 m ²
Landscape/Greenspace	1237.2 m 12475.4 m ²	0.1% ea	1237.2 m^2 12.5 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			1,483 m ²
TOTAL CATCHMENT AREA			13,946 m ²
	EFFECTIVE WEIGHTED CATC	CHMENT % IMPERVIOUS RUNOFF COEFFICIENT	10.6 % 0.27

PROP - PROPOSED CONDITIONS			
A60	Footprint	% Impervious	Effective Impervious Area
	2		2
Prop Buildings, Asphalt Road and Driveways	185.8 m ²	100.0% ea	185.8 m ²
Existing Buildings, Asphalt Road and Driveways	0.0 m ²	100.0% ea	0.0 m ²
Landscape/Greenspace	3340.5 m ²	0.1% ea	3.3 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			189 m ²
TOTAL CATCHMENT AREA			3,526 m ²
	EFFECTIVE WEIGHTED CATC	HMENT % IMPERVIOUS RUNOFF COEFFICIENT	
PROP - PROPOSED CONDITIONS			
A70	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	236.7 m ²	100.0% ea	236.7 m ²
Existing Buildings, Asphalt Road and Driveways	0.0 m ²	100.0% ea	0.0 m ²
Landscape/Greenspace	3615.2 m ²	0.1% ea	3.6 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			240 m ²
TOTAL CATCHMENT AREA			3,852 m ²
	EFFECTIVE WEIGHTED CATC	HMENT % IMPERVIOUS RUNOFF COEFFICIENT	
PROP - PROPOSED CONDITIONS			
A80	Footprint	% Impervious	Effective Impervious Area
Prop Buildings, Asphalt Road and Driveways	0.0 m ²	100.0% ea	0.0 m ²
Existing Buildings, Asphalt Road and Driveways	15364.5 m^2	100.0% ea	15364.5 m ²
Landscape/Greenspace	182319.6 m ²	0.1% ea	182.3 m ²
TOTAL CATCHMENT IMPERVIOUS AREAS			15,547 m ²
TOTAL CATCHMENT AREA			197,684 m ²
	EFFECTIVE WEIGHTED CATC	HMENT % IMPERVIOUS RUNOFF COEFFICIENT	

			Stage Stora	age Discharge	e Calculations			
			D	RY POND FACI	LITY			
Project Name: Project No.: Date:	JOSHU 19126 March 2	A COURT SUBDIVISC	DN					
Controlling Rim Elev:		Pipe				Slot Weir	Slot Weir	Total Outflow
Invert: Pipe Diameter: Structure/Pipe Length:		192.53 0.610 80.00	DITCH VOLUME	DRY POND VOLUME	TOTAL VOLUME	Width (m) = 0.050 Invert (m) = 192.52	Width (m) = 0.200 Invert (m) = 193.25	Outnow
								DISCHARGE
Elevation (m)		(m ³)	(m ³)	(m ³)	(m ³)	Slot Weir (m ³ /s)	Slot Weir (m ³ /s)	(m3/s)
194	1.48	23.38	324.87	694.83	1043.08	, ,	0.239	0.405
193.9	1.38	23.38	263.45	629.99	916.82	0.149	0.193	0.342
193.8	1.28	23.38	210.3	562.24	795.92		0.150	0.283
193.7	1.18	23.38	164.84	500.51	688.73		0.111	0.229
193.6	1.08	23.38	126.46	441.72			0.076	0.179
193.5	0.98	23.38	94.56	385.81	503.75		0.046	0.135
193.4	0.88	23.38	68.54	332.69	-	0.076	0.021	0.097
193.3	0.78	23.38	47.79	282.31	353.48		0.004	0.067
193.2	0.68	23.38	31.73	234.58			-	0.052
193.1	0.58	22.73	19.75	189.44	231.92	0.041	-	0.041
193.06 193	0.54 0.48	21.57 19.33	15.98	172.1 146.82	209.65 177.43	0.037 0.031	-	0.037 0.031
193	0.48	19.33	11.28 5.66	146.82	-			0.031
192.9	0.38 0.28	9.99	2.32	68.81	81.12	0.022 0.014		0.022
192.7	0.28	5.32	0.66	33.29	-	0.007		0.007
192.6	0.10	1.49	0.08	00.29	1.57	0.007		0.002
192.52		0.00	0.00	Ő	0.00			0.000

MUNICIPALITY: PROJECT NAME: PROJECT NO.:	L2W 1A1 TOWN OF W JOSHUA CO 19126					
STORAGE AND OUTF	LOW					
DRY POND						
Elevation	Increment Depth	Active Depth	Surface Area	Average Surface Area	Increment Volume	Total Volume
(m)	(m)	(m)	(m ²)	(m ²)	(m ³)	(m ³)
192.60	0.10	0.00	322.00	332.95	33.29	0.0
192.70	0.10	0.10	343.89	355.20	35.52	33.29
192.80	0.10	0.20	366.51	378.17	37.82	68.81
192.90	0.10	0.30	389.84	401.87	40.19	106.63
193.00	0.06	0.40	413.89	421.28	25.28	146.82
193.06	0.04	0.46	428.67	433.67	17.35	172.10
193.10	0.10	0.50	438.67	451.41	45.14	189.44
193.20	0.10	0.60	464.16	477.27	47.73	234.58
193.30	0.10	0.70	490.37	503.84	50.38	282.31
193.4	0.10	0.80	517.31	531.13	53.11	332.69
193.5	0.10	0.90	544.96	559.15	55.91	385.81
193.6	0.10	1.00	573.33	587.88	58.79	441.72
193.7	0.10	1.10	602.43	617.33	61.73	500.51
193.8	0.10	1.20	632.24	647.51	64.75	562.24
193.9	0.10	1.30	662.77	678.40	67.84	626.99
194		1.40	694.03			694.83

MUNICIPALITY: PROJECT NAME: PROJECT NO.:	TOWNSHIP JOSHUA CO 19126					
TORAGE AND OUTF A20 1% Ditch Storage:		ditah				
Elevation (m)	Increment Depth (m)	Active Depth (m)	Cross-Section Area (m ²)	Average Cross-Section Area (m ²)	Increment Volume (m ³)	Total Volume (m ³)
192.52	(11)	0.00	0.00	(111)	(111)	0.0
192.60	0.08	0.08	0.02	0.010	0.08	0.08
192.70	0.10	0.18	0.10	0.058	0.58	0.66
192.80	0.10	0.28	0.24	0.166	1.66	2.32
192.90	0.10 0.10	0.38	0.43	0.334 0.562	3.34 5.62	5.66
193.00	0.10	0.48	0.69	0.582	5.62 4.70	11.28
193.06	0.00	0.54	0.87	0.942	3.77	15.98
193.10	0.10	0.58	1.01	1.198	11.98	19.75
193.20	0.10	0.68	1.39	1.606	16.06	31.73
193.30	0.10	0.78	1.83	2.074	20.74	47.79
193.40	0.10	0.88	2.32	2.602	26.02	68.54
193.50	0.10	0.98	2.88	3.190	31.90	94.56
193.60	0.10	1.08	3.50	3.838	38.38	126.46
193.70	0.10	1.18	4.18	4.546	45.46	164.84
193.80	0.10	1.28	4.92	5.314	53.14	210.30
193.90	0.10	1.38	5.71	6.142	61.42	263.45
194.00	0.10	1.48	6.57	0.142	01.42	324.87

APPENDIX B MIDUSS Output Files – Overall Stormwater Management Plan Calculations

Existing Conditions

	sung Conditions
	Output File (4.7) EX.OUT opened 2024-03-06 16:16 Units used are defined by G = 9.810
	24 144 10.000 are MAXDT MAXHYD & DTMIN values
35	Licensee: UPPER CANADA CONSULTANTS COMMENT
55	3 line(s) of comment
	ALAN CORNERS SUBDIVISION, WEST LINCOLN
	STORMWATER MANAGEMENT PLAN EXISTING CONDITIONS
14	START
35	1 1=Zero; 2=Define COMMENT
55	3 line(s) of comment

	5 YEAR DESIGN STORM EVENT
2	STORM
	1 l=Chicago;2=Huff;3=User;4=Cdnlhr;5=Historic 3175.000 Coefficient a 20.000 Constant b (min)
	20.000 Constant b (min)
	20.000 Constant b (min) 1.000 Exponent c
	.450 Fraction to peak r 240.000 Duration ó 240 min
	48.843 mm Total depth
3	IMPERVIOUS 1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	015 Manning "n"
	98.000 SCS Curve No or C
	.100 Ia/S Coefficient .518 Initial Abstraction
35	COMMENT
	<pre>3 line(s) of comment *</pre>
	OUTLET A
	*
4	CATCHMENT
	2.000 ID No.ó 99999 .420 Area in hectares
	52.915 Length (PERV) metres
	.500 Gradient (%) 42.600 Per cent Impervious
	52.915 Length (IMPERV)
	.000 %Imp. with Zero Dpth
	1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n"
	74.000 SCS Curve No or C
	.100 Ia/S Coefficient 8.924 Initial Abstraction
	1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	.040 .000 .000 .000 c.m/s
15	.252 .877 .518 C perv/imperv/total ADD RUNOFF
10	.040 .040 .000 .000 c.m/s
14	START
35	1 1=Zero; 2=Define COMMENT
	3 line(s) of comment
	* OUTLET B
	*
4	CATCHMENT
	4.000 ID No.6 99999 2.290 Area in hectares
	123.558 Length (PERV) metres
	.500 Gradient (%) 3.800 Per cent Impervious
	123.558 Length (IMPERV)
	.000 %Imp. with Zero Dpth
	<pre>1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n"</pre>
	74.000 SCS Curve No or C
	.100 Ia/S Coefficient
	8.924 Initial Abstraction
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s
15	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total
15	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .000 .000 c.m/s
15 9	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RINOFF .040 .040 .000 .000 c.m/s ROUTE
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .000 .000 c.m/s ROUTE .040 .000 .000 c.m/s
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 Conduit Length .000 No Conduit defined .000 Zero lag
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .000 .000 c.m/s ROUTE .040 .000 .000 c.m/s ROUTE .000 .000 .000 c.m/s .000 No Conduit Length .000 .000 Zero lag .000 Beta weighting factor .000 .000
	<pre>8.924 Initial Abstraction 1 Option l=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 No Conduit Length .000 No Conduit Length .000 No Conduit defined .000 Zero lag .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches</pre>
9	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 c.m/s ROUTE .040 .040 .000 c.m/s 000 Conduit Length .000 .000 .000 Deco lag .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .000 c.m/s
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .000 .000 c.m/s ROUTE .040 .000 .000 c.m/s .000 Conduit Length .000 .000 Zero lag .000 Ret weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .000 c.m/s COMBLE .040 .040 .000 c.m/s
9	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 Conduit Length .000 No Conduit defined .000 Zero lag .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .000 c.m/s COMBINE 1 Junction Node No. .040 .040 .040 c.m/s
9	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 No Conduit Length .000 No Conduit defined .000 Seta weighting factor .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .000 c.m/s COMBINE 1 Junction Node No. .040 .040 .040 c.m/s START
9 17 14	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .000 .000 c.m/s ROUTE .040 .040 .000 c.m/s ROUTE .040 .040 .000 c.m/s ROUTE .040 .040 .000 c.m/s .000 Conduit Length .000 Zero lag .000 Deta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .040 .040 .040 .040 .040 .040 1 Junction Node No. .040 .040 .040 c.m/s START 1 1 1 =Zero; 2=Define 1
9	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 No Conduit Length .000 No Conduit defined .000 Seta weighting factor .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .000 c.m/s COMBINE 1 Junction Node No. .040 .040 .040 c.m/s START
9 17 14	<pre>8.924 Initial Abstraction 1</pre>
9 17 14	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .000 .000 c.m/s .253 .876 .276 C perv/imperv/total ADD RUNOFF .040 .040 .000 .000 c.m/s ROUTE .000 No Conduit defined .000 No Conduit defined .000 Deta weighting factor .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .040 .040 .040 .000 c.m/s COMBINE 1 Junction Node No. .040 .040 .040 .040 c.m/s START 1 =Zero; 2=Define COMMENT
9 17 14	<pre>8.924 Initial Abstraction 1</pre>
9 17 14 35	<pre>8.924 Initial Abstraction 1</pre>
9 17 14 35 4	<pre>8.924 Initial Abstraction 1</pre>
9 17 14 35	<pre>8.924 Initial Abstraction 1</pre>
9 17 14 35 4	<pre>8.924 Initial Abstraction 1</pre>

3 line(s) of comment OUTLET C OUTLET C * CATCHMENT 3.000 ID No.6 99999 2.230 Area in hectares 121.929 Length (PERV) metres 5.600 Gradient (%) 5.600 Per cent Impervious 121.929 Length (IMPERV) .000 % Imp. with Zero Dpth 1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n" 74.000 SCS Curve No or C .100 Ia/S Coefficient 8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .040 .340 .040 c.cm/s .253 .876 .287 C perv/imperv/total ADD RUNOFF .040 .375 .040 .040 c.m/s 4 15 .040 .375 .040 .040 c.m/s ROUTE UTE 100 Conduit Length 100 No Conduit defined 100 Zero lag 100 Beta weighting factor 100 Routing timestep 0 No. of sub-reaches .040 .375 .375 MBINE 9 .000 .000 .000 .000 .000 .040 c.m/s COMBINE 1 Junction Node No. .040 .375 CONFLUENCE 17 1 .375 .402 c.m/s 18 CONFLUENCE 1 JUNCEION Node No. .040 .402 .375 .000 c.m/s START 1 l=2ero; 2=Define COMMENT 3 line(s) of comment 14 35 100 YEAR DESIGN STORM EVENT STORM 1 1=Chicago;2=Huff;3=User;4=Cdnlhr;5=Historic 6300.000 Coefficient a 15.000 Constant b (min) 1.000 Exponent c 2 450 Fraction to peak r 240.000 Duration ó 240 min 98.819 mm Total depth IMPERVIOUS INFERVIOUS 1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat 0.15 Manning "n" 98.000 SCS Curve No or C 1.00 Ia/S Coefficient .518 Initial Abstraction COMMENT 3 line(s) of comment 3 35 OUTLET A CATCHMENT 2.000 4 NT ID No.ó 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious 2.000 .420 52.915 .500 42.600 52.915 Length (IMPERV) 52.915 Length (IMPERV) .000 & MInp. with Zero Dpth 1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n" 74.000 SCS Curve No or C .100 Ia/S Coefficient 8.924 Initial Abstraction 1 Option 1=Triang1r; 2=Rectang1r; 3=SWM HYD; 4=Lin. Reserv .109 .000 .375 .000 c.m/s .456 .933 .659 C perv/imperv/total ADD RIMOFF 35 COMMENT 3 line(s) of comment OUTLET B . CATCHMENT 4.000 ID No.ó 99999 2.290 Area in hectares 123.558 Length (PERV) metres .500 Gradient (%) 3.800 Per cent Impervious 123.558 Length (IMPERV) .000 %Imp, with Zero Dpth 1 Option 1=SCS CN/C; Z=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n" 74.000 SCS Curve No or C .100 Ia/S Coefficient 8.924 Initial Abstraction 1 Option 1=Trianglr; Z=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .245 .000 ..375 .000 c.m/s .455 .931 .473 C perv/imperv/total ADD RUNOFF .245 .245 .375 .000 c.m/s ROUTE .0 Conduit Length 4 15 9 Conduit Length No Conduit defined .000 .000 Zero lag Beta weighting factor .000 Routing timestep No. of sub-reaches .245 .245 .245 NE .000 0 .245 COMBINE 1 Junction Node No. .245 .245 .245 .000 c.m/s 17 1

.245 c.m/s 14

	1 1=Zero; 2=Define
35	COMMENT
	3 line(s) of comment
	*
	OUTLET D
	*
4	CATCHMENT
	1.000 ID No.ó 99999
	19.770 Area in hectares
	363.043 Length (PERV) metres
	.500 Gradient (%)
	7.900 Per cent Impervious
	363.043 Length (IMPERV)
	.000 %Imp. with Zero Dpth
	1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n"
	74.000 SCS Curve No or C
	.100 Ia/S Coefficient
	8.924 Initial Abstraction
	1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	1.270 .000 .245 .245 c.m/s
	.456 .944 .495 C perv/imperv/total
1.5	ADD BUNGEF
	1.270 1.270 .245 .245 c.m/s
35	COMMENT
	3 line(s) of comment
	*
	OUTLET C
	*
4	CATCHMENT
	3.000 ID No.6 99999
	2.230 Area in hectares
	121.929 Length (PERV) metres
	.500 Gradient (%)

	121.929 .000 1 .250 74.000 .100	Len %Imp Opti Manr SCS Ia/S	cent Imper gth (IMPER o. with Zer on 1=SCS C hing "n" Curve No S Coefficie tial Abstra	V) to Dpth N/C; 2=Hoi or C ent	rton; 3=G	Freen-Ampt;	4=Repeat
					ctanglr;	3=SWM HYD;	4=Lin. Reserv
			1.270				
		455	.931	.482	C perv/	/imperv/tota	al
15	ADD RU						
		239	1.450	.245	.245	c.m/s	
9	ROUTE						
			luit Length				
	.000		Conduit def	inea			
			a weighting	factor			
			ing timest				
			of sub-rea				
		239	1.450	1.450	.245	c.m/s	
17	COMBIN	Ξ					
			Node No.				
			1.450	1.450	1.649	c.m/s	
18	CONFLU						
			Node No.				
		239	1.649	1.450	.000	c.m/s	
20	MANUAL						

.500 Gradient (%)

Developed Conditions – NO SWM

Jev	eloped	Conditional le (4.7) PROP.	ons – N	IU SW	NI
	Output Fi Units use	d are defined	by G = 9	ned 2024-0.	3-08 13:05
	24	144 10.000 UPPER CANADA	are	MAXDT MAXH	YD & DTMIN values
35	COMMENT				
	3 line ALAN CORN	e(s) of comment HERS SUBDIVISIC	N. WEST LIN	ICOLN	
	STORMWATE	R MANAGEMENT P			
14	START	CONDITIONS			
35	1 1=Ze COMMENT	ero; 2=Define			
55	3 line	(s) of comment			
		SIGN STORM EVE	NT		
	*******	*****	114.1		
2	STORM 1	1=Chicago;2=H	uff;3=User;	4=Cdn1hr;5	=Historic
	3175.000 20.000	Coefficient Constant b	a (min)		
	1.000	Exponent c			
	.450 240.000	Fraction to p Duration ó 2			
		48.843 mm	Total depth		
3	IMPERVIOU 1		CN/C; 2=Hor	ton; 3=Gre	en-Ampt; 4=Repeat
	.015 98.000	Manning "n"	0		
	.100	SCS Curve No Ia/S Coeffici			
35	.518 COMMENT	Initial Abstr	action		
55		(s) of comment			
	* OUTLET A				
	*				
4	CATCHMENT 10.000	ID No.ó 99999			
	.450	Area in hecta Length (PERV)	res		
	.500	Gradient (%)			
	40.700 54.772	Per cent Impe Length (IMPER	rvious V)		
	.000	%Imp. with Ze	ro Dpth		
	.250	Manning "n"		ton; 3=Gre	en-Ampt; 4=Repeat
	74.000	SCS Curve No Ia/S Coeffici	or C		
	8.924	Initial Abstr	action		
	1	Option l=Tria		tanglr; 3=: .000	SWM HYD; 4=Lin. Reserv c.m/s
1.5	.2	.876	.506		/imperv/total
15	ADD RUNOF	.041	.000	.000	c.m/s
14	START	ero; 2=Define			
35	COMMENT				
	3 line *	(s) of comment			
	OUTLET B				
4	CATCHMENT				
	1.590	ID No.ó 99999 Area in hecta	res		
	102.956	Length (PERV)	metres		
	7.500	Gradient (%) Per cent Impe	rvious		
	102.956 .000	Length (IMPER %Imp. with Ze			
	1	Option 1=SCS		ton; 3=Gre	en-Ampt; 4=Repeat
	.250 74.000	Manning "n" SCS Curve No	or C		
	.100	Ia/S Coeffici	ent		
	8.924 1	Initial Abstr Option 1=Tria	nglr: 2=Rec	tanglr; 3=	SWM HYD; 4=Lin. Reserv
		.000 .52 .877	.000	.000 C perv	c.m/s /imperv/total
15	ADD RUNOF	Έ			
9	.0 ROUTE	.036	.000	.000	c.m/s
	.000	Conduit Lengt No Conduit de	h fined		
	.000	Zero lag			
	.000	Beta weightin Routing times			
	0	No. of sub-re	aches		,
17	COMBINE	.036	.036	.000	c.m/s
		tion Node No. 36 .036	.036	036	c.m/s
14	START		.000	.000	0.111/0
4	1 1=Ze CATCHMENT	ro; 2=Define			
	30.000 .390	ID No.ó 99999 Area in hecta			
	50.990	Length (PERV)	metres		
	.500 35.100	Gradient (%) Per cent Impe	rvious		
	50.990	Length (IMPER	(V)		
	.000	%Imp. with Ze Option 1=SCS		ton; 3=Gre	en-Ampt; 4=Repeat
		Manning "n"			1
	74.000	SCS Curve No Ia/S Coeffici	ent		
	8.924	Initial Abstr	action	tanglr: 3=	SWM UVD. A=Lin Reserv
	0	.000	.036	.036	SWM HYD; 4=Lin. Reserv c.m/s
15	.2 ADD RUNOF	.878	.472	C perv	/imperv/total
9		.031	.036	.036	c.m/s
э	.000	Conduit Lengt			
	.000	No Conduit de Zero lag	fined		
	.000	Beta weightin	g factor		

.000 Routing timester No. of sub-reaches 31 .031 0 .031 COMBINE .031 .036 c.m/s 17 JUNCTION Node No. .031 .031 .031 .031 1 .031 .031 START 1 1=Zero; 2=Define .060 c.m/s 14 CATCHMENT 4 ID No.ó 99999 Area in hectares Length (PERV) metres 40.000 .370 49.665 .500 Gradient (%) Per cent Impervious Per cent Impervious Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction 49.665 .000 .250 74.000 .100 8.924 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .033 .000 .031 .060 c.m/s .252 .879 .500 C perv/imperv/total ADD RUNOFF .033 .033 .031 .060 c.m/s 15 9 .000 .000 .000 .000 .000 Conduit Length Conduit Length No Conduit defined Zero lag Beta weighting factor Routing timestep No. of sub-reaches 0 .033 .033 .033 .033 .060 c.m/s 17 COMBINE 1 Junction Node No. .033 .033 .033 START 1 1=Zero; 2=Define 1 .092 c.m/s 14 Lance 1=Zero; 2=Define CATCHMENT CATCHMENT CATCHMENT CATCHMENT CATCHNENT CATCHNEN 4 .010 .010 .000 .033 .092 c.m/s .252 .878 .291 C perv/imperv/total 15 ADD RUNOFF .010 .010 .033 .092 c.m/s 9 ROUTE Conduit Length No Conduit defined Zero lag Beta weighting factor .000 .000 ... Beta weighting fact .000 Routing timestep 0 No. of sub-reaches .010 .010 1 T. .010 .092 c.m/s 17 Junction Node No. .010 .010 .010 1 .098 c.m/s 14 START 1=Zero; 2=Define CONFLUENCE 1 Junction Node No. .010 .098 .010 ROUTE 18 .000 c.m/s 9 Conduit Length .000 Conduit Length No Conduit defined Zero lag Beta weighting factor Routing timestep No. of sub-reaches .010 .098 .098 .000 .000 .000 .000 No .010 COMBINE 3 T .000 c.m/s 17 START 1 =Zero; 2=Define .098 c.m/s 14 1 1=Zero; 2=Define COMMENT 3 line(s) of comment * 35 OUTLET C CATCHMENT 4 80.000 19.770 363.043 ID No.ó 99999 Area in hectares Length (PERV) metres .500 Gradient (%) Per cent Impervious Per cent Impervious Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coeficient 363.043 .000 .250 74.000 .100 Ia/S Coefficient 8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .340 .000 .098 c.m/s .253 .889 .303 C perv/imperv/total ADD RUNOFF 15 .340 .340 .098 .098 c.m/s 9 ROUTE .000 .000 .000 .000 .000 Conduit Length Conduit Length No Conduit defined Zero lag Beta weighting factor Routing timestep No. of sub-reaches 40 .340 .340 0 .340 .098 c.m/s

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17	COMBINE	
	2 Junction Node No. .340 .340	.340 .340 c.m/s
14	START 1 1=Zero; 2=Define	
4	CATCHMENT 50.000 ID No.ó 99999	
	1.390 Area in hectar 92.263 Length (PERV)	metres
	1.000 Gradient (%) 10.600 Per cent Imper	rvious
	92.263 Length (IMPERV .000 %Imp. with Zen	♥)
		CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	74.000 SCS Curve No c .100 Ia/S Coefficie	or C
	8.924 Initial Abstra 1 Option 1=Triar	action nglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	.037 .000 .252 .876	.340 .340 c.m/s
15	ADD RUNOFF	1510 0 perty imperty cocur
9	.037 .037 ROUTE	.340 .340 c.m/s
	.000 Conduit Length .000 No Conduit def	fined
	.000 Zero lag .000 Beta weighting	g factor
	.000 Routing timest 0 No. of sub-rea	tep aches
17	.037 .037 COMBINE	.037 .340 c.m/s
	2 Junction Node No. .037 .037	.037 .377 c.m/s
14	START 1 1=Zero; 2=Define	
4	CATCHMENT 60.000 ID No.6 99999	
	60.000 ID No.6 99999 .360 Area in hectar 48.990 Length (PERV)	
	1.000 Gradient (%) 5.400 Per cent Imper	
	46.990 Length (IMPERV .000 %Imp. with Zer	V)
	1 Option 1=SCS (.250 Manning "n"	CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	74.000 SCS Curve No c .100 Ia/S Coefficie	or C
	8.924 Initial Abstra	
	.011 .000 .252 .883	.037 .377 c.m/s .286 C perv/imperv/total
15	ADD RUNOFF	
9	.011 .011 ROUTE	
	.000 Conduit Length .000 No Conduit def	n fined
	.000 Zero lag .000 Beta weighting	
	.000 Routing timest 0 No. of sub-rea	aches
17	.011 .011 COMBINE	.011 .377 c.m/s
	2 Junction Node No. .011 .011	.011 .385 c.m/s
14	START 1 1=Zero; 2=Define	
9	ROUTE .000 Conduit Length	
	.000 No Conduit def .000 Zero lag	
	.000 Beta weighting .000 Routing timest	g factor tep
	0 No. of sub-rea .011 .000	aches .000 .385 c.m/s
18	CONFLUENCE 2 Junction Node No.	
9	.011 .385 ROUTE	.000 .000 c.m/s
	.000 Conduit Length .000 No Conduit def	
	.000 Zero lag .000 Beta weighting	g factor
	.000 Routing timest 0 No. of sub-rea	aches
17	.011 .385 COMBINE	.385 .000 c.m/s
	3 Junction Node No. .011 .385	.385 .481 c.m/s
14	START 1 1=Zero; 2=Define	
35	COMMENT 3 line(s) of comment	
	* OUTLET E	
18	* CONFLUENCE	
	3 Junction Node No. .011 .481	.385 .000 c.m/s
14	START 1 1=Zero; 2=Define	
35	COMMENT 3 line(s) of comment	
	**************************************	VENT
2	**************************************	
4		uff;3=User;4=Cdnlhr;5=Historic
	15.000 Constant b 1.000 Exponent c	a (min)
	.450 Fraction to pe	
3	240.000 Duration ó 24 98.819 mm 1 IMPERVIOUS	Total depth
د		CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	.015 Maining II"	

SCS Curve No or C 98.000 Ia/S Coefficient Initial Abstraction .100 35 COMMENT 3 line(s) of comment OUTLET A CATCHMENT 4 10.000 .450 54.772 ID No.ó 99999 Area in hectares Length (PERV) metres Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=Empiopedie, 2=Destandle, 2=Destandle .500 54.772 .000 .250 74.000 .100 8.924 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .112 .000 .385 .000 c.m/s .455 .933 .649 C perv/imperv/total .435 .355 ADD RUNOFF .112 .112 .385 .000 c.m/s START 1 l=Zero; 2=Define 15 14 35 line(s) of comment OUTLET B CATCHMENT 4 ID No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) 20.000 1.590 102.956 102.307 Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv 21 000 385 000 c m/s .000 .250 74.000 .100 8.924 1 .221 .221 .000 .385 .000 c.m/s .456 .934 .492 C perv/imperv/total .456 ADD RUNOFF .221 ROUTE .000 Con .000 No 15 .221 .385 .000 c.m/s ROUTE .000 Conduit Length .000 No Conduit defined .000 Zero lag .000 Beta weighting factor .000 Routing timestep 0 No. of sub-reaches .221 .221 .221 COMBINE 1 Junction Noter 9 .000 c.m/s 17 Junction Node No. 1 .221 .221 .221 .221 START 1 1=Zero; 2=Define .221 c.m/s 14 1 1=Zero; 2 . CATCHMENT 30.000 ID No.6 99999 .390 Area in hectares 50.990 Length (PERV) metres Cradient (%) 4 Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) %Inp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C .500 35.100 50.990 .000 .250 74.000 Ia/S Coefficient 8.924 Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .086 .000 .221 .221 c.m/s .456 .933 .623 C perv/imperv/total 15 ADD RUNOFF .086 .086 .221 .221 c.m/s ROUTE 9 Conduit Length No Conduit defined Zero lag Beta weighting factor Routing timestep .000 .000 .000 .000 .000 UNO. Of sub-reaches .086 .086 .086 COMBINE No. of sub-reaches .221 c.m/s 17 COMBINE 1 Junction Node No. .086 .086 .086 .280 c.m/s START 1=Zero; 2=Define 1 14 CATCHMENT 4 ID No.ó 99999 ID No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) % Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SNM HYD; 4=Lin. Reserv 91 000 .086 .280 c.m/s 40.000 .370 49.665 .500 39.500 49.665 .000 .250 74.000 .100 8.924 1 .091 .091 .000 .086 .280 c.m/s .456 .932 .644 C perv/imperv/total .UNUFF .091 ROUTE 15 .091 .086 .280 c.m/s 9 Conduit Length No Conduit defined Zero lag .000 .000

	.000	Beta weighting Routing timeste	factor		1
	0	Routing timeste No. of sub-read .091 .091	cĥes .091	.280 c.m/s	
17	COMBINE	nction Node No.			1
14	START	.091 .091	.091	.339 c.m/s	
4		Zero; 2=Define			
-	70.000	ID No.ó 99999			
	.390 50.990	Area in hectare Length (PERV) m	netres		
	.500 6.200	Gradient (%) Per cent Imperv	zious		
	50.990	Length (IMPERV)	1		
	1	%Imp. with Zero Option 1=SCS CM		n; 3=Green-Ampt; 4=Repeat	
	.250 74.000	Manning "n" SCS Curve No or	c C		
	.100 8.924	Ia/S Coefficier Initial Abstrac	it stion		
	1	Option 1=Triano .059 .000	glr; 2=Recta .091	nglr; 3=SWM HYD; 4=Lin. Reser .339 c.m/s	rv I
15		.450 .555	.091 .486	.339 c.m/s C perv/imperv/total	
		.059 .059		.339 c.m/s	
9	ROUTE	Conduit Length			
	.000	No Conduit defi Zero lag	ined		
	.000	Beta weighting	factor		
	000	Beta weighting Routing timeste No. of sub-read	:p ches		-
17	COMBINE	.059 .059	.059	.339 c.m/s	1
	1 Jur	nction Node No. .059 .059	.059	.395 c.m/s	
14	START	Zero; 2=Define			
18	CONFLUEN	ICE			
		nction Node No. .059 .395	.059	.000 c.m/s	
9	ROUTE	Conduit Length			
	.000	No Conduit defi Zero lag			1
	.000	Beta weighting	factor		
	.000	Routing timeste No. of sub-read	p ches		
17	COMBINE	.059 .395	.395	.000 c.m/s	
	3 Jur	nction Node No. .059 .395	.395	.395 c.m/s	
14	START	Zero; 2=Define			
35	COMMENT				1
	3 lir	ne(s) of comment			
	*				
	* OUTLET (*	2			1
4	* CATCHMEN	1T			1
4	* CATCHMEN 80.000 19.770	NT ID No.ó 99999 Area in hectare			1
4	* CATCHMEN 80.000 19.770 363.043 .500	NT ID No.ó 99999 Area in hectare Length (PERV) m	netres		1
4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043	NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imperv Length (IMPERV)	netres /ious		1
4	* CATCHMEN 80.000 19.770 363.043 .500 7.900	<pre>IT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imperv Length (IMPERV) %Imp. with Zerc Option 1=SCS C)</pre>	netres vious Dpth	n; 3=Green-Ampt; 4=Repeat	1
4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250	VT ID No.6 99999 Area in hectare Length (PERV) n Gradient (%) Per cent Imperv Length (IMPERV) %Imp. with Zerc Option 1=SCS Ch Manning "n"	netres vious o Dpth N/C; 2=Horto	n; 3=Green-Ampt; 4=Repeat	20
4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .100	VT ID No.6 99999 Area in hectare Length (PERV)n Gradient (%) Per cent Imperv Length (IMPERV) % Imp. with Zerr Option 1=SCS Ch Manning "n" SCS Curve No or Ia/S Coefficient	netres yious > Dpth W/C; 2=Horto c C nt	n; 3=Green-Ampt; 4=Repeat	1 : 1 20
4	* CATCHMEN 80.000 19,770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .100 8.924 1	NT ID No.6 99999 Area in hectare Length (PERV) m Gradlent (%) Per cent Imperr Length (IMPERV) %Imp. with Zerr Option 1=SCS CU Manning "n" SCS Curve No on Ia/S COefficier Initial Abstraa Option 1=Triang	netres vious D Dpth N/C; 2=Horto c C nt stion glr; 2=Recta	nglr; 3=SWM HYD; 4=Lin. Reser	
-	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .100 8.924 1 1 1.	<pre>VT ID No.6 99999 Area in hectare Length (PERV) n Gradient (%) Per cent Imperr Length (IMPERV) %Imp. with Zerc Option 1=SCS Ch Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Trian (270 .000 456 .944</pre>	netres vious D Dpth N/C; 2=Horto c C nt stion glr; 2=Recta		
4	* CATCHMEN 80.000 19.770 363.043 500 7.900 363.043 .000 1 2550 74.000 100 8.924 1 1. ADD RUMC	<pre>VT ID No.6 99999 Area in hectare Length (PERV) n Gradient (%) Per cent Imperr Length (IMPERV) %Imp. with Zerc Option 1=SCS Ch Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Trian (270 .000 456 .944</pre>	netres vious D Dpth N/C; 2=Horto c C nt stion glr; 2=Recta	nglr; 3=SWM HYD; 4=Lin. Reser	
-	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC 1, ROUTE	<pre>VT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CU IA/S COEfficier Initial Abstraa Option 1=Triang .270 .000 .436 .944 DFF .270 1.270</pre>	netres /ious Dpth //C; 2=Horto c C tt ztion glr; 2=Recta .395 .495	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total	
15	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 .1 ADD RUNC 1 ROUTE .000 .000	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradlent (%) Per cent (%) Per cent (%) V% Inp. with Zerc Option 1=SCS CU Manning "n" SCS Curve No op Ia/S Coefficier Initial Abstraa Option 1=Trian .270 .000 .456 .944 DFF .270 1.270 Conduit Length No Conduit defi</pre>	netres yious b Dpth N/C; 2=Horto c C ttion 191; 2=Recta .395 .495 .395	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total	
15	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 .000 .100 8.924 1 .000 .000 .000 .000 .000	<pre>VT ID No.6 99999 Area in hectars Length (PERV) m Gradlent (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS C(INPERV) Wanning "n" SCS Curve No op Ia/S Coefficier Initial Abstraa Option 1=Triang .270 .000 .456 .944 DFF .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting</pre>	netres /ious D Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total	
15	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 .100 .250 74.000 .100 .100 .100 ADD RUNC 1. ROUTE .000 .000 .000	<pre>VT ID No.6 99999 Area in hectars Length (PERV) m Gradlent (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS C(INPERV) Wanning "n" SCS Curve No op Ia/S Coefficier Initial Abstraa Option 1=Triang .270 .000 .456 .944 DFF .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting</pre>	netres /ious D Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total	
15 9	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .000 .000 .000 .000 .000 .000 .	VT ID No.6 99999 Area in hectare Length (PERV) n Gradient (%) Per cent Imper Length (IMPERV) %ImJ. with Zerr Option 1=SCS CUTY Manning "n" SCS Curve No or Ia/S Coefficier Initial Abstrat Option 1=Triang. 270 .000 Korduit 1=Definition Conduit Length No Conduit Length No Conduit Length	netres /ious D Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total	
15	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1. ADD RUNC 1. ROUTE .000 .000 .000 .000 .000 .000 .000 .0	VI ID No.6 99999 Area in hectare Length (PERV) m Gradlent (%) Per cent Impery Length (IMPERV) % Imp. with Zero Option 1=SCS CC Manning "n" SCS Curve No on Ia/S COefficier Initial Abstrac Option 1=Triang (270 0.000 (.456 .944) PF 2.770 1.270 Conduit Length No Conduit deff Zero lag Beta weighting Routing timeste No. of sub-reac .270 1.270 conduit gtimeste No. of sub-reac .270 1.270	netres yious o Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 .ined factor p t.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1. ADD RUNC 1. ROUTE .000 .000 .000 .000 .000 .000 .000 .0	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Nam.ing "n" SCS Curve No ou Ia/S Coefficier Initial Abstras Option 1=Triang 270 .000 .456 .944 PF .270 1.270 Conduit Length No Conduit defj Zero lag Beta weighting Routing timeste No. of sub-reas .270 1.270 conduit defineste No. of sub-reas .270 1.270</pre>	netres /ious D Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s	
15 9 17	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC 1 ADD RUNC 1 ADD RUNC 1 COMBINE 2 Jut 1 STANT 1 L1 2 CATCHMEN	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Nam.ing "n" SCS Curve No ou Ia/S Coefficier Initial Abstraa Option 1=Triang .270 .000 .456 .944 PF .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting Routing timeste .270 1.270 conduit defi Zero lag Beta weighting Routing timeste .270 1.270 conduit defi Zero lag Deta weighting Routing timeste .270 1.270 conduit defi Zero lag Routing timeste .270 1.270 conduit defi .270 conduit defi .270 condui</pre>	netres /ious D Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 ined factor pp 1.270 1.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC 1 ADD RUNC 1 ADD RUNC 1 COMBINE 2 Jut 1 STANT 1 L1 2 CATCHMEN	<pre>NT ID No.6 99999 Area in hectars Length (PERV) m Gradlent (%) Per cent Imper Length (IMPERV) with Zer Option 1=SCS CU Manning "n" SCS Curve No ou Ia/S Coefficier Initial Abstraa Option 1=Triang .270 .000 .456 .944 DFF .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting Routing timeste No. of sub-read .270 1.270 hection Node No. .270 1.270 cero; 2=Define N ID No.6 99999 Area in hectare</pre>	netres /ious Dpth /(C; 2=Horto c C tt tit .395 .495 .395 ined factor ep thes 1.270 1.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .000 .000 .000 .000 .000 .000 .	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) %Imp. with Zerc Option 1=SCS CC Manning "n" SCS Curve No ou Ia/S Coefficier Initial Abstrac Option 1=Triang (270 0.000 455 .944 PF 270 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Routing timeste No. of sub-read .270 1.270 Lero; 2=Define NT ID No.6 99999 Area in hectare Length (DERV) m</pre>	netres /ious Dpth /(C; 2=Horto c C tt tit .395 .495 .395 ined factor ep thes 1.270 1.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1. ADD RUNC 1. ROUTE .000 .000 .000 .000 .000 .000 .000 .0	<pre>YT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Impery Length (IMPERV) % Imp. with Zero Option 1=SCS CC Manning "n" SCS Curve No on IA/S COefficier Initial Abstrac Option 1=Triang (270 0.000 4.55 .944 PF 2.270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting Routing timeste No. of sub-read 2.70 1.270 conduit defi Zero 1.270 Distion Node No. 2.70 1.270 conduit defi Zero 1.270 Distion Node No. 2.70 1.270 conding timeste No. of sub-read 2.70 1.270 conduit defi Zero 1.270 conduit defi Di No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Impery</pre>	netres yious b Dpth V(C; 2=Horto c C tt tition glr; 2=Recta .395 .495 .395 ined factor p 1.270 1.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC 1 ROUTE .000 .000 .000 .000 .000 .000 .000 .0	<pre>VT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Second Second William (No. 200 1/2000 - 1000 1/3/S Coefficier Initial Abstrac Option 1=Ttara Option 1=Ttara Dialector 200 1.270 No. 000 Deta weighting Routing timeste No. of sub-read No. of sub-rea</pre>	netres /ious Dpth //C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 ined factor pches 1.270 1.270 2.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC 1 ADD RUNC 1 ADD RUNC 1 ADD RUNC 1 COMBINE 2 JUI 1 STANT 1 LI=2 CATCHMEN 50.000 1.390 92.263 .000 1.250	<pre>VT ID No.6 99999 Area in hectard Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) with Zer Option 1=SCS CUTVE No to Ia/S Coefficier Initial Abstraa Option 1=Triang .270 .000 .456 .944 PF .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting Routing timeste No. of sub-read .270 1.270 cero; 2=Define VT ID No.6 99999 Area in hectard Length (PERV) m Gradient (%) Per cent Imperv Length (IMPERV) %Imp. with Zer Option 1=SCS CU Manning "n"</pre>	netres jious Dpth V(C; 2=Horto c C tt iti .395 .495 .395 .495 .395 lined factor pp 1.270 1.270 1.270 .270 .270 .270 .270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 250 74.000 .100 8.924 1 1. ROUTE .000 .000 .000 .000 .000 .000 .000 .0	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CC Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang .270 .000 .456 .944 PF 2.70 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Routing timeste No. of sub-read .270 1.270 Length (ImSEV) Condi Length No Conduit defi Zero 1ag Beta weighting To No.6 sub-read .270 1.270 Length (DERV) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CD Manning "n" SCS Curve No on SCS SCUrve No SCS SCUrve No on SCS SCUrve No on SCS SCUrve No SCS SCUrve</pre>	netres yious b Dpth V(c; 2=Horto c C tt dt dt dt de de de de de de de de de de	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s	
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 .000 74.000 1 .250 74.000 .000 .000 .000 .000 .000 .000 .	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CI Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang .270 .000 .456 .944 PF 2.70 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Routing timeste No. of sub-read .270 1.270 Lenci Node No. .270 1.270 Lenci 1.270 Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS C Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac</pre>	netres yious b Dpth V(c; 2=Horto c C tt tit .395 .495 .395 lined factor pp 1.270 1.270 ss metres yious b Dpth V(c; 2=Horto c C tt ttin	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat	τ.Α
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1.250 74.000 8.924 1 .ADD RUNC 1. ROUTE .0000 .000 .000 .000 .000 .0000 .000	<pre>YT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Impery Length (IMPERV) % Imp. with Zerc Option 1=SCS CO Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang .270 1.270 Conduit Length No Conduit defi Zero lag Beta weighting Routing timeste No. of sub-read .270 1.270 tion Node No. .270 1.270 tion Node No. .270 1.270 tiD No.6 99999 Area in hectare Length (IMPERV) % Imp. with Zerc Option 1=SCS CC Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang .200 .000</pre>	netres /ious /o Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor p. 1.270 1.270 2.2 bopth V(C; 2=Horto c C tt .270 .270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s	τ.Α
15 9 17 14	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 ADD RUNC COMBINE 2 Jur 1. STANT 1 1= 50.000 COMBINE 2 Jur 2 Jur 1. STANT 1 1= 50.000 1.390 92.263 1.000 1.390 92.263 1.000 1.250 74.000 Como .	<pre>YT ID No.6 99999 Area in hectare Length (PERV) m Gradlent (%) Per cent Impery Length (IMPERV) %Imp. with Zer Option 1=SCS CC Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang .270 1.270 Conduit Length No Conduit deff Zero lag Beta weighting Routing timeste No. of sub-read Zro 1.270 ction Node No. .270 1.270 totion Node No. .270 1.270 totion Node No. .270 1.270 ction Node No. .270 1.270 ction Node No. .270 1.270 ction Node No. .270 1.270 ction Note No. .270 .270 ction Note No. .270 .270 ction</pre>	netres pious b Dpth V(C; 2=Horto c C tt tion ages ages ages ages ined factor pp 1.270 1.270 255 ages b Dpth V(C; 2=Horto c C tt ages ages b Dpth V(C; 2=Horto c C tt ages ages ages b Dpth ages b Dpth ages b Dpth ages b Dpth ages b Dpth ages b Dpth ages b Dpth ages b Dpth b Dpth b C; 2=Horto c C c C tt ages b Dpth b C; 2=Horto c C c C c C tt c C c C c C c C c C c C c C c C	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s C perv/imperv/total	τ.Α
15 9 17 14 4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 ADD RUNC COMBINE 2 Jur 1. STANT 1 1= 50.000 COMBINE 2 Jur 2 Jur 1. STANT 1 1= 50.000 1.390 92.263 1.000 1.390 92.263 1.000 1.250 74.000 Como .	<pre>NT ID No.6 99999 Area in hectart Length (PERV) n Gradlent (%) Per cent Imperr Length (IMPERV) % Ing. with Zerc Option 1=SCS CM Manning "n" SCS CUrve No on Ia/S Coefficier Initial Abstraa Option 1=Triang .270 1.270 Conduit Length No Conduit defi Zerc lag Beta weighting Routing timeste No. of sub-read .270 1.270 Marea in hectart Length (PERV) n Gradient (%) Per cent Imperr Length (PERV) n Gradient (%) Per cent Imperr Length (PERV) n Gradient (%) Per cent Imperr Di ISCS Curve No on Ia/S Coefficier Initial Abstrad Option 1=Triang .200 .000 .454 .935</pre>	netres /ious /o Dpth V(C; 2=Horto c C tt tion glr; 2=Recta .395 .495 .395 .395 ined factor p. 1.270 1.270 2.2 bopth V(C; 2=Horto c C tt .270 .270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s C perv/imperv/total	τ.Α
15 9 14 4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 250 74.000 .100 8.924 1 1 ROUTE .000 .000 .000 .000 .000 .000 .000 .0	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang 270 .000 455 .944 PF 270 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Beta weighting Beta weighting ID No.6 99999 Area in hectare No. of sub-reas 270 1.270 Length (IMPERV) % ID No.6 99999 Area in hectare Length (IMPERV) % Imp. with Zerc Option 1=SCS CM Manning "n" SCS Curve No on Ia/S Coefficier Initial Abstrac Option 1=Triang 200 .000 454 .935 PFF 200 .200 Conduit Length</pre>	metres pious Dpth V(; 2=Horto c C tit .395 .495 .395 ined factor pp thes 1.270 1.270 2.2 ppth V(c; 2=Horto c C tit .22 .22 .22 .22 .22 .22 .22 .2	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s C perv/imperv/total	τ.Α
15 9 14 4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 250 74.000 .100 8.924 1 1 ROUTE .000 .000 .000 .000 .000 .000 1. COMBINE 2 Jur START 1 1=2 CATCHMEN 50.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.390 92.263 1.000 1.000 1.000 .000 .000 .000 .000	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CI Manning "n" SCS Curre No on Ia/S Coefficier Initial Abstrac Option 1=Triang .270 .000 .456 .944 PF 2.70 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Routing timeste No. of sub-reac .270 1.270 condit Imegating Routing timeste No. of sub-reac .270 1.270 crtion Node No. .270 1.270 Length (ERX) m Gradient (%) Per cent Imper Length (IMPERV) % Imp. with Zerc Option 1=SCS CD Manning "n" SCS Curre No on Ia/S Coefficier Initial Abstrac Option 1=Triang .200 .200 Conduit Length No Conduit Length</pre>	netres yious o Dpth V(c; 2=Horto c C tt tition glr; 2=Recta .395 .495 .395 lined factor p 1.270 1.270 2.505 1.270 c C tt tion .505 1.270 .505 1.270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s C perv/imperv/total	τ.Α
15 9 14 4	* CATCHMEN 80.000 19.770 363.043 .500 7.900 363.043 .000 1 .250 74.000 8.924 1 1 ADD RUNC .000 .000 .000 .000 .000 .000 .000 .0	<pre>NT ID No.6 99999 Area in hectare Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) with Zer Option 1=SCS CUTY No Namning "n" SCS CUTY No no IA/S Coefficier Initial Abstraa Option 1=Triang 270 .000 .456 .944 PF .270 1.270 Conduit Length No Conduit defi Zero 1ag Beta weighting Routing timeste No. of sub-read Zero 1.270 Leta weighting Routing timeste No. of sub-read Zero 1.270 Nation Node No. .270 1.270 Nation Node No. .270 1.270 Pet cent Imper Length (PERV) m Gradient (%) Per cent Imper Length (IMPERV) SC Curve No on IA/S Coefficier Initial Abstraa Option 1=Triang .200 .000 (Conduit Length No Conduit Length No Conduit Length</pre>	netres yious b Dpth V(C; 2=Horto c C tt tition glr; 2=Recta .395 .495 .395 ined factor p 1.270 1.270 .270	nglr; 3=SWM HYD; 4=Lin. Reser .395 c.m/s C perv/imperv/total .395 c.m/s .395 c.m/s 1.270 c.m/s n; 3=Green-Ampt; 4=Repeat nglr; 3=SWM HYD; 4=Lin. Reser 1.270 c.m/s C perv/imperv/total	τ.Α

		.200	.200	.200	1.270 c.m/s	
17	COMBINE					
		nction Noo	de No.			
		.200	.200	.200	1.342 c.m/s	
14	START					
	1 1=	Zero; 2=De	efine			
4	CATCHME	TN				
	60.000	ID No.	5 99999			
	.360	Area in	n hectares (PERV) metr nt (%)			
	48.990	Length	(PERV) metr	es		
	1.000	Gradie	nt (%)			
	5.400	Per ce	nt Imperviou	s	3=Green-Ampt;	
	46.990	Length	(IMPERV)			
	.000	%Imp. v	with Zero Dp	th		
	1	Option	I=SCS CN/C;	2=Horton;	3=Green-Ampt;	4=Repeat
	.250	Manning	g "n"			
	.100	ses cui	rve No or C pefficient			
	0 004	T = 1 + 1 - 1	1 31	~		
	0.924	Option	1=Trianglr:	2=Pectano	1r. 3-SWM HVD.	4=Lin. Reserv
	-	.062	000	200	1 342 c m/s	4-bin. Reserv
		.455	923	480	1.342 c.m/s C perv/imperv/	(total
15	ADD RUN	.433 NFF	. 525	.400	c perv/imperv/	cocar
		.062	.062	.200	1.342 c.m/s	
9	ROUTE					
	.000		t Length			
	.000	No Cond	duit defined			
	000	Zero la	ag			
	.000	Beta we	eighting fac	tor		
	.000	Routing	g timestep			
	0	No. of	eighting fac g timestep sub-reaches			
		.062	.062	.062	1.342 c.m/s	
17	COMBINE	nction Noo	- N -			
		.062		.062	1.357 c.m/s	
14	START		.002		1.007 0.1170	
		Zero; 2=De	efine			
9	ROUTE					
	.000	Conduit	t Length			
	.000	No Cond	duit defined ag eighting fac g timestep sub-reaches			
	.000	Zero la	ag			
	.000	Beta we	eighting fac	tor		
	.000	Routing	g timestep			
	0	No. of	sub-reaches			
18	CONFLUE	.062	.000	.000	1.357 c.m/s	
10		nction Noo	do No			
		.062		.000	.000 c.m/s	
9	ROUTE			.000	.000 0.1.1,0	
2		Conduit	t Length			
	.000	No Cond	duit defined			
	.000	Zero la				
	.000	Beta we	eighting fac	tor		
	.000	Routing	g timestep			
	0		sub-reaches			
			1.357	1.357	.000 c.m/s	
17	COMBINE					
		nction Noo				
14	START	.062	1.357	1.357	1.717 c.m/s	
14		Zero; 2=De	ofino			
35	COMMENT					
50		ne(s) of (comment			
	*					
	OUTLET 1	Ε				
	*					
18	CONFLUE					
		nction Noo				
		.062	1.717	1.357	.000 c.m/s	
n	MANUAT					

20 MANUAL

Developed Conditions – FULL SWM

Jev	eloped	Conditio	ns – Fl	JLL SW M ad 2024-03-12 16:40 310	
	Output F Units us	ile (4.7) SWM.OU ed are defined b	T opene y G = 9.3	ed 2024-03-12 16:40 310	
	24	144 10.000	are M	AXDT MAXHYD & DTMIN values	
35	Licensee COMMENT	: UPPER CANADA C	ONSULTANTS		
	3 lin	e(s) of comment			
		NERS SUBDIVISION ER MANAGEMENT PL		DLN	
	EXISTING	CONDITIONS			
35	COMMENT 3 lin	e(s) of comment			
	******	*****			
	25mm MOE	E DESIGN STORM			
2	STORM				
	1 512.000	l=Chicago;2=Hu Coefficient a	ff;3=User;4	=Cdnlhr;5=Historic	
	6.000	Constant b	(min)		
	.800	Exponent c Fraction to pe			
	240.000	Duration ó 24	0 min		
3	IMPERVIO	25.035 mm T	otal depth		
2		Option 1=SCS C	N/C; 2=Hort	on; 3=Green-Ampt; 4=Repeat	
	.015 98.000	Manning "n"			
	.100	SCS Curve No o Ia/S Coefficie	nt		
14	.518	Initial Abstra	ction		
14	START 1 1=Z	ero; 2=Define			
4	CATCHMEN				
	30.000 .390	ID No.ó 99999 Area in hectar	es		
	50.990	Length (PERV)	metres		
	.500 35.100	Gradient (%) Per cent Imper	vious		
	50.990	Length (IMPERV)		
	.000	%Imp. with Zer	o Dpth	on; 3=Green-Ampt; 4=Repeat	
	.250	Manning "n"		,	
	74.000 .100	SCS Curve No o Ia/S Coefficie			
	8.924	Initial Abstra	ction		
	1	Option 1=Trian 012 .000	glr; 2=Recta .000	anglr; 3=SWM HYD; 4=Lin. Res	erv
		./50	.343	.000 c.m/s C perv/imperv/total	
15	ADD RUNO	FF 012 .012	.000	.000 c.m/s	
11	CHANNEL				
	.100 3.000	Base Width Left bank slo	= pe 1:		
	3.000	Right bank slo	pe 1:		
	.500	Manning's "n" O/a Depth in m	etres		
	.500				
	Velocity	Select Grade i: = .1 = .2	08 metres 66 m/sec		
	FIOW Cap	actuy5	J4 C.III/S		
9	Critical ROUTE		66 metres		
	110.000	Conduit Length			
	.458 309.776	Supply X-facto Supply K-lag (Beta weighting	r <.b sec)		
	.500	Beta weighting	factor		
	300.000 1	Routing timest No. of sub-rea	ep ches		
	START	.012	.012	.000 c.m/s	
14		ero; 2=Define			
4	CATCHMEN	Т			
	40.000	ID No.ó 99999 Area in hectar	es		
	49.665	Length (PERV)	metres		
	.500 39.500	Gradient (%) Per cent Imper	vious		
	49.665	Length (IMPERV)		
	.000	%Imp. with Zer Option 1=SCS C		on; 3=Green-Ampt; 4=Repeat	
	.250	Manning "n"		· • • •	
	74.000	SCS Curve No o Ia/S Coefficie			
	8.924	Initial Abstra	ction		
	1	Option l=Trian 013 .000	glr; 2=Recta .012	anglr; 3=SWM HYD; 4=Lin. Res .000 c.m/s	erv
		098 .797	.374	C perv/imperv/total	
15	ADD RUNO	FF 013 .013	.012	.000 c.m/s	
11	CHANNEL				
	.100	Base Width Left bank slo	 pe 1:		
	3.000	Right bank slo	pe 1: pe 1:		
	.040	Manning's "n" O/a Depth in m	etres		
	.500	Select Grade i	n %		
	Depth Velocity		11 metres 71 m/sec		
	Flow Cap	acity = .8	88 c.m/s		
9	Critical ROUTE	depth = .0	68 metres		
	76.000	Conduit Length			
	.438 210.169	Supply X-facto Supply K-lag (r <.5		
	.500	Beta weighting	factor		
	200.000 1	Routing timest No. of sub-rea	ep ches		
		013 .013	.013	.000 c.m/s	
14	START 1 1=Z	ero; 2=Define			
35	COMMENT				
	3 lin *******	e(s) of comment *****			
	5 YEAR D	ESIGN STORM EVEN	Т		
2	******* STORM	*****			

1=Chicago; 2=Huff; 3=User; 4=Cdnlhr; 5=Historic l=Chicago;2=Huff;3= Coefficient a Constant b (min) Exponent c Fraction to peak r Duration ó 240 min a (min) 3175.000 20.000 1.000 .450 240.000 48.843 mm Total depth IMPERVIOUS 3 S Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient 015 98.000 .518 Initial Abstraction 35 COMMENT 3 line(s) of comment OUTLET B 4 -ongon (IMFEKV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" .250 Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .031 .000 .013 .000 c.m/s .252 .878 .472 C perv/imperv/total OFF 74.000 8.924 1 .031 .031 .031 .013 .000 c.m/s CHANNEL 15 11 CHANNEL .100 Base Width = 3.000 Left bank slope 1: 3.000 Right bank slope 1: .040 Maning's "n" .500 O/a Depth in metres .500 Select Grade in % Depth = .159 metres Velocity = .336 m/sec Flow Capacity = .554 c.m/s Critical depth = .101 metres ROUTE 9 ROUTE Conduit Length Supply X-factor <.5 Supply K-lag (sec) Beta weighting factor Routing timestep 110 000 .441 245.520 .500 200.000 1 No. of sub-reaches .031 .031 COMBINE .028 .000 c.m/s 17 COMBINE Junction Node No. .031 .031 .028 START 1 =Zero; 2=Define .028 c.m/s 14 START
1 = Zero; 2=Define
CATCHMENT
40.000 ID No.6 99999
.370 Area in hectares
49.665 Length (PERV) metres
.500 Gradient (%)
39.500 Per cent Impervious
49.665 Length (IMPERV)
.000 % Imp. with Zero Dpth
1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
.250 Manning "n"
74.000 SCS Curve No or C
.100 Ia/S Coefficient
8.924 Initial Abstraction
1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
.033 .000 .028 .028 c.m/s
.028 c.m/s
.028 c.m/s 4 .222 .8/9 .500 C perv/imperv ADD RUNOFF .033 .033 .028 .028 c.m/s CHANNEL .100 Base Width = 3.000 Left bank slope 1: 3.000 Right bank slope 1: .040 Manning's "n" .600 O/a Depth in metres .500 Select Grade in % Depth = .163 metres Velocity = .342 m/sec Flow Capacity = .888 c.m/s Critical depth = .104 metres ROUTE 15 11 Critic ROUTE 76.000 .412 166.890 .500 150.000 9 Conduit Length Supply X-factor <.5 Supply K-lag (sec) Beta weighting factor Routing timestep NO. of sub-re. .033 .033 COMBINE No. of sub-reaches .029 .028 c.m/s 17
 Junction Node No.
 .033
 .029

 START
 1
 1=Zero;
 2=Define
 .057 c.m/s 14 1 LEAST. CATCHMENT 22 000 ID No.6 99999 is becta: 4 20.000 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious 102.956 1.000 102.307 Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CM/C? Z=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=TriangIr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .036 .000 .029 .057 c.m/s Length (IMPERV) .000 .250 74.000 8.924 1

	.252	.877	.299	C perv/imperv/total	
15	ADD RUNOFF .036	.036	.029	.057 c.m/s	
11	CHANNEL .100 Base W	idth =			
	3.000 Left 3.000 Right	bank slope bank slope	1:		
	.040 Mannin .750 O/a De 1.000 Select	pth in met	res		
	Depth =	Grade in .147 .454	* metres		
	Velocity = Flow Capacity = Critical depth =	2.246	c.m/s		
9	ROUIL		metres		
	.486 Supply	t Length X-factor	<.5		
	.500 Beta w 300.000 Routin	K-lag (se eighting f g timestep sub-reach	actor		
	1 No. of .036	sub-reach	.036	.057 c.m/s	
17	COMBINE 1 Junction No		.030	.007 C.m/S	
18	.036 CONFLUENCE		.036	.087 c.m/s	
	1 Junction No .036	de No. .087	.036	.000 c.m/s	
4	CATCHMENT	ó 99999			
	.390 Area i	n hectares (PERV) me			
	.500 Gradie	nt (%) nt Impervi			
	50.990 Length	(IMPERV)	Doth		
	1 Option .250 Mannin	1=SCS CN/ g "n"	C; 2=Hort	on; 3=Green-Ampt; 4=Repeat	
	74.000 SCS Cu .100 Ia/S C	rve No or oefficient	c		
	1 Option	l Abstract 1=Triangl	r; 2=Recta	anglr; 3=SWM HYD; 4=Lin. Re	serv
	.252	.087	.036	.000 c.m/s C perv/imperv/total	
15 10	ADD RUNOFF .010 POND	.095	.036	.000 c.m/s	
10	5 Depth - Dischar 192.520 .				
	192.800 .0	140	82.1		
	193.400 .0 193.700 .0 Peak Outflow Maximum Depth Maximum Storage	970 229	424.6		
	Peak Outflow Maximum Depth	= .03 = 193.06	9 c.m/s 9 metres		
	Maximum Storage .010	= 215 .095	. c.m .039	.000 c.m/s	
17	COMBINE 2 Junction No				
14	.010	.095	.039	.039 c.m/s	
	START		.055		
35	1 1=Zero; 2=D COMMENT	efine	.000		
	1 l=Zero; 2=D COMMENT 3 line(s) of *	efine	.055	,	
	<pre>1 1=Zero; 2=D COMMENT 3 line(s) of * OUTLET D *</pre>	efine	.055		
35	1 1=Zero; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No.	efine comment ó 99999			
35	1 1=2ero; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363 043 Length	efine comment ó 99999 n hectares (PERV) me	; tres		
35	1 1=Zero; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce	efine comment ó 99999 n hectares (PERV) me nt (%) nt Impervi (IMPERV)	: tres .ous		
35	1 1=2erc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 %Imp. 1 Ortion	efine comment 6 99999 n hectares (PERV) me nt (%) nt Impervi (IMPERV) with Zero 1=SCS CM/	tres .ous Dpth	on; 3=Green-Ampt; 4=Repeat	
35	1 1=Zerc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 1D No. 19.770 Area i 363.043 Length .500 Ferce 363.043 Length .000 %Imp. 1 Option .250 Mannin 74.000 SCS Cu	efine comment ó 99999 n hectares (PERV) me nt (%) nt Impervi (IMPERV) with Zero 1=SCS CN/ g "n" rve No or	etres .ous Dpth C; 2=Hort(C		
35	1 1=2ero; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 1D No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 %Imp. .100 For Control .250 Mannin 74.000 SCS Cu .100 IASC 8.924 Initia	efine comment 6 99999 n hectares (EERV) me nt (%) nt Impervi (IMPERV) with Zero with Zero sefficient 1 Abstract	tres ous Dpth C; 2=Horta C	on; 3=Green-Ampt; 4=Repeat	
35	1 1=Zerc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 1D No. 19.770 Area i 363.043 Length .500 Gradle 7.900 Per ce 363.043 Length .000 %Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S C 8.924 Initia 1 Option .340	efine comment 6 99999 n hectares (PERV) ment (%) nt Impervi (IMPERV) with Zero 1=SCS CN/ g "n" rve No or oefficient 1=Triangl .000	tres ous Dpth C; 2=Hort C : : : : : : : : : : : : : : : : : :	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re	serv
35	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 %Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/SC C 8.924 Initia 1 Option .340 .253 ADD RUNOFF	efine comment 6 99999 n hectares (PERV) net (IMPERV) (IMPERV) with Zero 9 "n" rve No or oefficient 1 =Abstract 1 =Abstract .000 .889	: tres Dpth C; 2=Hort: C : : : :	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	serv
35	1 1=Zerc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .000 % Imp. 100 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 100 Jacks 100 Jacks 10	efine comment 6 99999 n hectaress (PERV) me nt (%) nt Impervi (IMPERV) with Zero 1=SCS CN/ g "n" rve No or oefficient 1 abstract 1=Triangl .000 .889 .340	tres Dpth C; 2=Horto C	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re	serv
35 4 15	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S C 8.924 Initia 1 Option .340 .340 .253 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left	efine comment 6 99999 n hectares (PERV) me nt (%) nt Impervi (IMPERV) with Zero 1=SCS CN/ g "n" rve No or oefficient 1=Strangl -000 .839 .340 .341 .34	tres ous Dpth C; 2=Horto C .039 .303 .039 .039	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	serv
35 4 15	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 %Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S C 8.924 Initia 1 Option .340 .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Left 3.000 Left 3.000 Left 3.000 Left 3.000 Left	efine comment 6 99999 n hectares (PERV) me nt [%] nt Impervi (IMPERV) with Zero 1=SCS CN/ 1=SCS CN/ .000 .889 .340 idth == bank slope bank slope bank slope g's "n"	<pre>btres cous Dpth (; 2=Hort(</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	serv
35 4 15	1 1=2erc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 100 Jars 8.924 Linitia 1 Option .250 Mannin 74.000 SCS Cu .100 Lars 8.924 Linitia 1 Option .233 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Right .500 O/a De .300 Select Depth = =	efine comment 6 99999 n hectares (PERV) method (IMPERV) with Zero efficient 1=SCS CN/ g "n" rwe No or oefficient 1=Striangl .000 .889 .340 idth = bank slope bank slope bank slope g's "n" pt in met Grade in .252	tres 	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	Serv
35 4 15	1 1=Zerc; 2=D COMMENT 3 line(s) of * OUTLET D * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 100 ji .250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .253 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Jest 3.000 Jest 3	efine comment 6 99999 n hectares (PERV) mit (IMPERV) with Zero 1=Striangl .000 .889 .340 idth = bank slope g's 'n' met Grade in .255 .685 1.355	b tres ous Dpth C; 2=Horta C ion .039 .037 .039 .0	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	Serv
35 4 15	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SC SC 1.00 Ia/S CC 8.924 Initia 1 Option .340 .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Left 3.000 Left 9.300 Select Depth = Velocity = Flow Capacity = Critical depth = CRUTE	efine comment 6 99999 n hectares (PERV) main (IMERN) with Zero l=SCS CNJ g "n" rve No or oefficient l Abstract .000 .889 .340 idth = bank slope g ts "n" g ts "n" g ts "n" constant .252 .175 .175	tres cous Dpth C; 2=Hort C : .039 .303 .039 .039 .303 .039 .303 .039 .303 	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	serv
35 4 15 11	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Img. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .340 .255 ADD RUNOFF .340 CHAINEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Left 9.300 Select Depth = Velocity = Flow Capacity = Critical depth = ROUTE 7.000 Condui	efine comment 6 99999 n hectares (PERV) main (IMERN) with Zero efficient 1 Abstract 1=Triangl .000 .889 .340 idth = bank slope g's "n" g's "n" g's "n" fine Grade in .252 .682 1.355 t Length X-factor	<pre>itres itres i</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	serv
35 4 15 11	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 %Imp. 1 Option .250 Manuin 74.000 SC SC .100 Ia/S CC 8.924 Initia 1 Option .340 .253 ADD RUMOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Right .025 Manuin .500 O/a De .300 Select Depth = Velocity = Flow Capacity = Critical depth = ROUTE 77.000 Condui .217 Supply 8.774 Supply	efine comment 6 99999 n hectares (PERV) me nt (%) nt Impervi (UMERV) g "n" rv"n" oefficient 1 Abstract .889 .340 idth = bank slope g's "n" pth in met Grade in met Grade in .135 .685 .135 .685 X-factor K-lag (se eighting f	<pre>itres itres ious Dpth C; 2=Hort(C; 2=Hort(itres interim interim</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	Serv
35 4 15 11	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 333.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SC SC .340 CHNNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Left 1.205 Mannin .340 CHNNEL 1.205 Mannin .340 CHNNEL 1.205 Mannin .340 CHNNEL 1.205 Mannin .340 CHNNEL 1.205 Mannin .000 Left 0.255 Mannin .000 Select Depth = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = ROUTE 77.000 71.000 Esta W 120.000 Revitm	efine comment ó 99999 n hectares (PERV) me nt Impervi (UMEENV) g "n" rve No or oefficient 1 Abstract 1 Abstract 1 Abstract 1 Abstract 1 Abstract 340 idth = bank slope bank slope bank slope bank slope bank slope bank slope bank slope bank slope idth = c.689 .340 idth = c.689 .340 idth = c.684 i.352 .175 t Length X-factor K-lag (se eighting f utimester sub-react	<pre>itres itres ious Dpth C; 2=Hort(C inn r; 2=Rect; .039 .039 a 1: .039 a 1: .039 a 1: .039 a constant const</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	serv
35 4 15 11	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 333.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 ScS Cu .100 Ia/S CC 8.924 Initia .2453 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Right .025 Mannin .500 O/A De .340 CHANNEL 1.200 Base W 3.000 Left .025 Mannin .500 O/A De .340 CHANNEL 1.200 Base W 3.000 Left .025 Mannin .025 Mannin .030 Select Depth = Flow Capacity = Flow Capacity = Flow Capacity = ROUTE 77.000 Condmi .217 Supply 83.774 Supply .500 Beta w 12.000 Routin 1 No. of .340 COMMENT	efine comment 6 99999 n hectares (PERV) me (IMPERV) with Zero 1=SCS CNV g "n" rve No or oefficient 1=SCS CNV .889 .340 idth = bank slope bank slope bank slope bank slope g's "n" pth in me Grade in Scate in X-factor K-lag (se eighting f sub-react .340	c c c c ion r; 2=Rect. .039 .039 .039 .1: ress % metress .c.m/s metress <.5 c) actor	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imperv/total	Serv
35 4 15 11 9	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 333.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option 250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .340 CIANNEL 1.200 Base W 3.000 Left 3.000 Right .025 Mannin .500 O/a De .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Right .025 Mannin .500 O/a De .340 CHANNEL 1.200 Base W 3.000 Right .025 Mannin .500 O/a De .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Select Depth = Flow Capacity = Flow Capacity = Flow Capacity = ROUTE 77.000 Condui .217 Supply 5.500 Beta W 10.000 Routh 1 No. of .340 COMENT 3 line(s) of	efine comment 6 99999 n hectares (PERV) me (IMPERV) with Zero 1=SCS CNV g "n" rve No or oefficient 1=SCS CNV .889 .340 idth = bank slope bank slope bank slope bank slope g's "n" pth in me Grade in Scate in X-factor K-lag (se eighting f sub-react .340	<pre>itres itres ious Dpth C; 2=Hort(C inn r; 2=Rect; .039 .039 a 1: .039 a 1: .039 a 1: .039 a constant const</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	Serv
35 4 15 11 9	<pre>1</pre>	efine comment 6 99999 n hectares (PERV) me (IMPERV) with Zero 1=SCS CNV g "n" rve No or oefficient 1=SCS CNV .889 .340 idth = bank slope bank slope bank slope bank slope g's "n" pth in me Grade in Scate in X-factor K-lag (se eighting f sub-react .340	<pre>itres itres ious Dpth C; 2=Hort(C inn r; 2=Rect; .039 .039 a 1: .039 a 1: .039 a 1: .039 a constant const</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	Serv
35 4 15 11 9 35	1 1=2erc; 2=D COMMENT 3 line(s) of * COTHENT 80.000 ID No. 19.770 Area i 1363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .253 Mannin .340 .253 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Kight .300 Select Depth == Velocity = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = Critical depth = No. of .340 COMMENT 3 line(s) of * OUTLET C * CATCHMENT 50.000 ID No.	efine comment 6 99999 n hectares (PERV) mit (IMPERV) with Zero 1=Triangl .000 .889 .340 idth = bank slope g's "n" g's "n" f Grade in .252 .685 1.353 t Length X-factor K-lag (se eighting f g timester sub-react .340 comment	<pre>c c c c c c c c c c c c c c c c c c c</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	serv
35 4 15 11 9 35	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 363.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .253 Mannin .340 .253 ADD RUNOFF .340 CHANNEL 1.200 Base W 3.000 Left 3.000 Left 3.000 Left 3.000 Jeft 3.000 Kipht .300 Select Depth = Velocity = Flow Capacity = Flow Capacity = Critical depth = ROUTE 7.000 Conduit 217 Supply 83.774 Supply 83.774 Supply 3.745 Supply	efine comment 6 99999 n hectares (PERV) methods (IMPERV) with Zero over ficient 1=SCS CN/ g "n" 1=SCS CN/ g "n" 1=SCS CN/ g"n" 1 Abstract 1=Triangl .000 .889 .340 idth = bank slope bank slope bank slope g's n" pt in met Grade in .255 .173 t Length X-factor K-lag (ss idth = sub-react .340 comment 6 99999 n hectares (PERV) me	<pre>cus cus cus cus cus cus cus cus cus cus</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	Serv
35 4 15 11 9 35	1 1=Zerc; 2=D COMMENT 3 line(s) of * CATCHMENT 80.000 ID No. 19.770 Area i 333.043 Length .500 Gradie 7.900 Per ce 363.043 Length .000 % Imp. 1 Option .250 Mannin 74.000 SCS Cu .100 Ia/S CC 8.924 Initia 1 Option .340 CIANNEL 1.200 Base W 3.000 Left 3.000 Left .025 Mannin .340 CHANNEL 1.200 Base W 3.000 Left .025 Mannin .500 O/A De .340 CHANNEL 1.200 Base W 3.000 Left Piw Capacity = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = Flow Capacity = ROUTE 77.000 Condui .217 Supply 83.774 Supply .340 COMMENT 3 line(s) of * OUTLET C * CATCHMENT 50.000 ID No. .340 COMMENT	efine comment 6 99999 n hectares (PERV) me (PERV) me (IMPERV) with Zero 1=SCS (NV) g "n" rve No or oefficient 1=SCS (NV) .889 .340 idth = bank slope bank slope bank slope bank slope bank slope bank slope g's "n" pth in met Grade in X-factor K-lag (se eighting f sub-react .340 comment 6 99999 n hectares	<pre>stres .ous Dpth C; 2=Hort(C .ous .ous .ous .ous .ous .ous .ous .ous</pre>	on; 3=Green-Ampt; 4=Repeat anglr; 3=SWM HYD; 4=Lin. Re .039 c.m/s C perv/imper/total .039 c.m/s	Serv

	1	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	.250	Manning "n"
	74.000	SCS Curve No or C Ia/S Coefficient
	8.924	Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	.0	037 .340 .312 .039 c.m/s
15	ADD RUNOE	252 .876 .318 C perv/imperv/total FF
4	.C CATCHMENT	037 .377 .312 .039 c.m/s
	60.000	ID No.ó 99999
	.360 48.990	Area in hectares Length (PERV) metres
	1.000 5.400	Gradient (%) Per cent Impervious
	46.990	Length (IMPERV)
	.000	%Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	.250	Manning "n"
	.100	SCS Curve No or C Ia/S Coefficient
	8.924	Initial Abstraction Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	.0	011 .377 .312 .039 c.m/s
15	.2 ADD RUNOE	252 .883 .286 C perv/imperv/total FF
9		011 .386 .312 .039 c.m/s
5	.000	Conduit Length
	.500	Supply X-factor <.5 Supply K-lag (sec)
	.500	Beta weighting factor
	600.000 1	Routing timestep No. of sub-reaches
17	.C	011 .386 .386 .039 c.m/s
÷ /	2 Juno	ction Node No.
35	COMMENT	011 .386 .386 .400 c.m/s
		e(s) of comment
	OUTLET E	
18	* CONFLUENC	CE
	2 Juno	ction Node No.
14	START	
35	1 1=Ze COMMENT	ero; 2=Define
J	3 line	e(s) of comment
		*********** DESIGN STORM EVENT
2		******
2	1	1=Chicago;2=Huff;3=User;4=Cdn1hr;5=Historic
		Coefficient a Constant b (min)
	1.000	Exponent c
	.450 240.000	Fraction to peak r Duration ó 240 min
3		98.819 mm Total depth
2		
	IMPERVIOU 1	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
		Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n"
	1 .015 98.000 .100	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient
35	1 .015 98.000	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C
35	1 .015 98.000 .100 .518 COMMENT	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient
35	1 .015 98.000 .100 .518 COMMENT	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction
35	1 .015 98.000 .100 .518 COMMENT 3 line * OUTLET B * CATCHMENT	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment
	1 .015 98.000 .100 .518 COMMENT 3 line * OUTLET B * CATCHMENT	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction a(s) of comment
	1 .015 98.000 .100 .518 COMMENT 3 line * OUTLET B * CATCHMENT 30.000 .390 50.990	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment ID No.6 99999 Area in hectares Length (PERV) metres
	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .390 50.990 .500 35.100	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment ID No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious
	1 015 98.000 .100 .518 COMMENT 3 line * CATCHMENT 30.000 .390 500 50.990	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "" SCS Curve No or C Ia/S Coefficient Initial Abstraction a(s) of comment I No.ó 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV)
	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .390 50.990 .500 35.100 50.990 .090 1	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment D No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	1 015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .390 50.990 .500 35.100 50.990 .000 1 .250 74.000	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C 1a/S Coefficient Initial Abstraction e(s) of comment ID No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) %Imp. with Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C
	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 35.100 50.990 .000 1 .250 74.000 .100	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment
	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 35.100 50.990 .000 1 .250 74.000 .100 8.924 1	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
	1 .015 98.000 .510 .510 .510 .510 .000 .000 .500 .5	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment
	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .300 50.990 .500 35.100 50.990 .500 1 .250 74.000 1.250 74.000 8.924 1 .00 8.924 1 .00 .000 8.924 1 .00 .000 .000 .000 .000 .000 .000 .0	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment F ID No.6 99999 Area in hectares Length (PERV) metres Gradient (%) Per cent Impervious Length (IMPERV) %Imp. wit Zero Dpth Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction Option 1=Tiang1r; 2=Rectang1r; 3=SWM HYD; 4=Lin. Reserv 086 .000 .386 .000 c.m/s 156 .933 .623 C perv/imperv/total FF
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .000 .50.990 .500 35.100 50.990 .500 35.100 50.990 .1 .250 74.000 .100 8.924 1 .250 .4D RUNDE	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .390 50.990 .500 35.100 50.990 .500 35.100 50.990 .250 74.000 .100 8.924 1	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * * CATCHMENT 30.000 .390 50.990 .500 35.100 50.990 .500 35.100 1250 74.000 .100 8.924 1 .C CHNNEL .100 3.000 3.000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .000 1 .250 74.000 .100 8.924 1 .250 .4DD RUNOE .250 .250 .000 .100 .250 .250 .250 .250 .250 .250 .250 .2	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 35.100 50.990 .500 35.100 50.990 .000 1.250 74.000 .100 8.924 .200 ADD RUNOE ADD RUNOE .200 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.000000 3.00000 3.00000000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 55.00 55.00 10 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 .250 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .000 50.990 .500 35.100 50.990 .000 1 .250 74.000 .000 1.250 74.000 .000 6.924 1 .250 74.000 .000 6.924 1 .250 74.000 .000 6.924 1 .250 74.000 .000 5.0000 5.0000 5.0000 5.0000 5.0000 5.0000 5.0000 5.00000 5.00000 5.00000000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .300 50.990 .000 1 .250 74.000 .100 8.924 1 .250 .000 .100 8.924 1 .250 .000 .000 .000 .000 .000 .000 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 35.100 50.990 .1 .250 74.000 .100 8.924 1 .250 .100 8.924 1 .250 .000 .100 8.924 1 .000 .500 .500 .500 .500 .500 .500 .5	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .500 50.990 .500 35.100 50.990 .500 35.100 50.990 .1 .250 74.000 .100 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 .000 .000 .000 .000 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .500 50.990 .500 35.100 50.990 .500 35.100 50.990 .1 .250 74.000 .100 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 .000 .000 .000 .000 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CARCHMENT 30.000 .330 50.990 .000 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .250 74.000 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 .000 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.900 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.900 .000 8.924 1 .000 8.900 .000 8.924 1 .000 8.900 .000 8.924 1 .000 8.900 .000 8.900 1 .000 8.900 1 .000 8.924 1 .000 8.900 .000 8.900 1 .000 8.900 .000 8.900 1 .000 8.900 .000 8.924 1 .000 8.900 .000 .000 8.924 1 .000 8.900 .000 .000 .000 .000 8.924 .000 .000 .000 .000 .000 .000 8.924 .000 .000 .000 .000 .000 .000 .000 .0	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manniag "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment (s) constant (s) co</pre>
4	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .500 35.100 50.990 .500 35.100 50.990 .000 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .250 74.000 .100 8.924 1 .200 74.000 .000 8.924 1 .200 74.000 .000 8.924 1 .200 74.000 .000 8.924 1 .200 74.000 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.924 1 .000 8.900 .000 8.924 1 .000 8.900 .000 8.900 .000 8.900 .000 8.900 .000 8.900 .000 8.900 .000 .0	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4 15 11 9 17	1 .015 98.000 .518 COMMENT 3 line * 0UTLET B CARCHMENT 30.000 .500 .500 .500 .500 .500 .500 .5	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manniag "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment (s) constant (s) co</pre>
4 15 11	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .330 50.990 .000 50.990 .000 1 .250 74.000 .100 8.924 1 .250 .000 .100 8.924 1 .250 .000 .000 .000 .000 .000 .000 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4 15 11 9 17	1 .015 98.000 .518 COMMENT 3 line * CATCHMENT 30.000 .390 50.990 .000 1 .250 74.000 .000 1 .250 74.000 .000 1 .250 74.000 .000 1 .250 74.000 .000 .000 .000 .000 .000 .000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>
4 15 11 9 17 14	1 .015 98.000 .518 COMMENT 3 line * 0UTLET B * CATCHMENT 30.000 .500 50.990 .500 35.100 50.990 .000 1 .250 74.000 .100 8.924 1 .250 74.000 8.924 1 .00 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000000 3.00000000	<pre>Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat Manning "n" SCS Curve No or C Ia/S Coefficient Initial Abstraction e(s) of comment</pre>

	.370 Area in hectares
	49.665 Length (PERV) metres .500 Gradient (%)
	39.500 Per cent Impervious
	49.665 Length (IMPERV) .000 %Imp. with Zero Dpth
	<pre>1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n"</pre>
	74.000 SCS Curve No or C .100 Ia/S Coefficient
	8.924 Initial Abstraction 1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv
	.091 .000 .083 .083 c.m/s .456 .932 .644 C perv/imperv/total
15	ADD RUNOFF
11	.091 .091 .083 .083 c.m/s
	.100 Base Width = 3.000 Left bank slope 1:
	3.000 Right bank slope 1: .040 Manning's "n"
	.600 O/a Depth in metres .500 Select Grade in %
	Depth = .246 metres Velocity = .441 m/sec
	Flow Capacity = .888 c.m/s Critical depth = .164 metres
9	ROUTE 76.000 Conduit Length
	.371 Supply X-factor <.5
	EOO Dete unichtige forten
	1500 Routing timestep 1 No. of sub-reaches
17	.091 .091 .083 .083 c.m/s COMBINE
	1 Junction Node No. .091 .091 .083 .166 c.m/s
14	START 1 1=Zero; 2=Define
4	CATCHMENT 20.000 ID No.ó 99999
	20.000 ID No.6 99999 1.590 Area in hectares 102.956 Length (PERV) metres
	1.000 Gradient (%) 7.500 Per cent Impervious
	102.307 Length (IMPERV) .000 %Imp. with Zero Dpth
	Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat .250 Manning "n"
	74.000 SCS Curve No or C
	.100 Ia/S Coefficient 8.924 Initial Abstraction
	1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HVD; 4=Lin. Reserv .221 .000 .083 .166 c.m/s .456 .934 .492 C perv/imperv/total
15	ADD RUNOFF
11	.221 .221 .083 .166 c.m/s CHANNEL
	.100 Base Width = 3.000 Left bank slope 1:
	3.000 Right bank slope 1: .040 Manning's "n"
	.750 O/a Depth in metres
	1.000 Select Grade in % Depth = .305 metres Velocity = .714 m/sec Flow Capacity = 2.246 c.m/s Critical denth = .240 metres
	Flow Capacity = 2.246 c.m/s Critical depth = .240 metres
9	ROUTE 211.000 Conduit Length
	.471 Supply X-factor <.5 221.722 Supply K-lag (sec)
	500 Beta weighting factor 200.000 Routing timestep
	1 No. of sub-reaches .221 .221 .205 .166 c.m/s
17	COMBINE
1.0	.221 .221 .205 .332 c.m/s
18	CONFLUENCE 1 Junction Node No.
4	.221 .332 .205 .000 c.m/s
	70.000 ID No.6 99999 .390 Area in hectares 50.990 Length (PERV) metres
	.500 Gradient (%)
	6.200 Per cent Impervious 50.990 Length (IMPERV)
	.000 %Imp. with Zero Dpth 1 Option 1=SCS CN/C; 2=Horton; 3=Green-Ampt; 4=Repeat
	.250 Manning "n" 74.000 SCS Curve No or C
	.100 Ia/S Coefficient 8.924 Initial Abstraction
	1 Option 1=Trianglr; 2=Rectanglr; 3=SWM HYD; 4=Lin. Reserv .059 .332 .205 .000 c.m/s
15	.456 .933 .486 C perv/imperv/total ADD RUNOFF
10	.059 .391 .205 .000 c.m/s POND
10	5 Depth - Discharge - Volume sets
	Jeppin Disclarge Volume SetS 192,520 .000 .0 192,800 .0140 82.1 193,060 .0370 209.6
	193.000 .0570 209.0 193.400 .0970 424.6
	193.700 .229 688.7 Peak Outflow = .211 c.m/s
	Peak Outflow = .211 c.m/s Maximum Depth = 193.660 metres Maximum Storage = 654. c.m
17	.059 .391 .211 .000 c.m/s COMBINE
	2 Junction Node No. .059 .391 .211 .211 c.m/s
14	START 1 1=Zero; 2=Define

III					
35	COMMENT				
55		(s) of comment			
	* OUTLET D				
	*				
4	CATCHMENT 80.000	ID No.ó 99999			
	19 770	Area in hectare	s		
	363.043	Length (PERV) m Gradient (%) Per cent Imperv Length (IMPERV) %Imp. with Zero	etres		
	7.900	Per cent Imperv	ious		
	363.043	Length (IMPERV)	Doth		
	1	Option 1=SCS CN	/C; 2=Hort	on; 3=Green-Ampt; 4=Repeat	
	.250	Manning "n" SCS Curve No or	C		
	1 0 0	- /			
	8.924 1	Ia/S Coefficien Initial Abstrac	tion 1r: 2=Rect.	anglr; 3=SWM HYD; 4=Lin. Re	serv
	1.2	.000	.211	.211 c.m/s C perv/imperv/total	
15	.4 ADD RUNOF	.56 .944 `F	.495	C perv/imperv/total	
	1.2		.211	.211 c.m/s	
11	CHANNEL 1.200	Base Width	-		
	3.000	Left bank slop	e 1:		
	3.000	Right bank slop Manning's "n"	e 1:		
	.515	Manning's "n" O/a Depth in me Select Grade in	tres		
	Depth	- 18	% 5 metres		
	Velocity	= .98	5 metres 6 m/sec		
	Flow Capa Critical		0 c.m/s 0 metres		
9	ROUTE	Conduit Length			
	.000	Supply X-factor	<.5		
	58.581	Supply X-factor Supply K-lag (s	ec)		
	.500 100.000	Beta weighting Routing timeste	ractor p		
	1	Routing timeste No. of sub-reac	hes		
35	1.2 COMMENT	1.270	1.263	.211 c.m/s	
	3 line	(s) of comment			
	OUTLET C				
4	* CATCHMENT				
4	50.000	ID No.ó 99999 Area in hectare			
	1.390	Area in hectare	s		
	92.263 1.000	Length (PERV) m Gradient (%)	etres		
	10.600 92.263	Gradient (%) Per cent Imperv Length (IMPERV)	ious		
	.000	%Imp. with Zero	Dpth	on; 3=Green-Ampt; 4=Repeat	
	1 .250	Option 1=SCS CN Manning "n"	/C; 2=Hort	on; 3=Green-Ampt; 4=Repeat	
	74.000	SCS Curve No or			
		Ia/S Coefficien Initial Abstrac			
	1	Option 1=Triang	lr; 2=Rect	anglr; 3=SWM HYD; 4=Lin. Re	serv
	. 2	.00 1.270 .54 .935	1.263	.211 c.m/s C perv/imperv/total	
15	ADD RUNOF	Έ			
4	.2 CATCHMENT	1.342	1.263	.211 c.m/s	
	60.000	ID No.ó 99999			
		Area in hectare Length (PERV) m			
	1.000	Gradient (%)			
	5.400 46.990	Per cent Imperv Length (IMPERV)	ious		
	.000	%Imp. with Zero	Dpth		
	1 .250	Option 1=SCS CN Manning "n"	/C; 2=Hort	on; 3=Green-Ampt; 4=Repeat	
	74.000	SCS Curve No or			
	.100 8.924	Ia/S Coefficien Initial Abstrac	t tion		
	1	Option 1=Triang	lr; 2=Rect	anglr; 3=SWM HYD; 4=Lin. Re	serv
	.0	62 1.342 55 .923	1.263	.211 c.m/s C perv/imperv/total	
15	ADD RUNOF	Έ			
9	.0 ROUTE	62 1.358	1.263	.211 c.m/s	
	.000	Conduit Length			
		Supply X-factor Supply K-lag (s			
	.500	Beta weighting	factor		
	600.000 1	Routing timeste No. of sub-reac	p hes		
17	.0	62 1.358	1.358	.211 c.m/s	
17	COMBINE 2 Junc	tion Node No.			
35	.0 COMMENT	62 1.358	1.358	1.569 c.m/s	
20	3 line	(s) of comment			
	* OUTLET E				
	*				
18	CONFLUENC				
	.0	tion Node No. 62 1.569	1.358	.000 c.m/s	
20	MANUAL				