HILLSIDE SUBDIVISION PRELIMINARY STORMWATER MANAGEMENT REPORT

318 Lake Street
Picton, ON
Prince Edward County

May 2025



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1.0 Introduction

1.1 Project Background

WSE Consulting Inc. has been retained as part of a consultant team to assist with Stormwater Management for the proposed development at 318 Lake Street.

1.2 Location and Site Description

The legal description of the property is located at 318 Lake St., Town of Picton, County of Prince Edward.

The property is bounded by County Road 10 to the west, County Road 22 to the south, and vacant land to the north and east.

There are existing homes and a business located adjacent to the site along County Rd 22 that are located at higher grade than the proposed developed portions of the site, as such there will be no impacts to these lands.

There is also an existing home located at 299 County Road 10 that will require the proposed development to develop a grading plan to ensure no adverse impacts either from draining to the existing property or receiving drainage from the property. This would be part of the grading design for final approval.

The site location is outlined on Figure 1. And the propose development outlined on Figure 2.

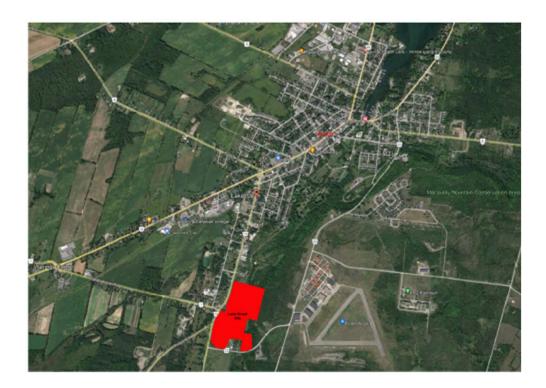
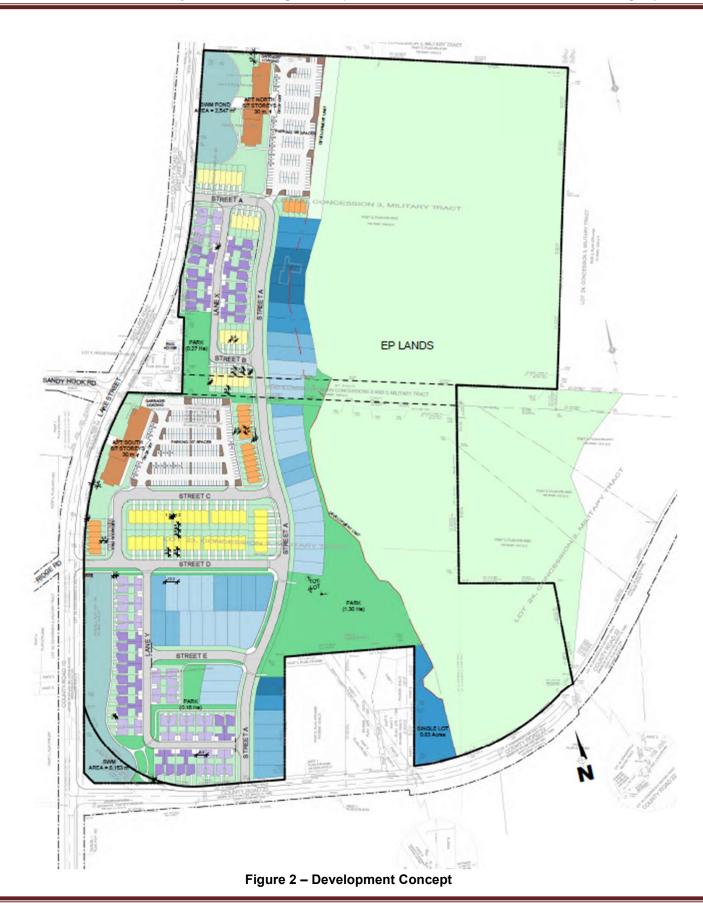


Figure 1 - Site Location



1.3 Geotechnical Investigation

Geotechnical Investigation have been completed for the southern and northern portions of the project in 2 separate reports and have been referenced for soil conditions for the stormwater review. Excerpts from the reports are included in **Appendix A**.

The site soils generally consist of a surficial layer of topsoil, approximately 100 – 150 mm in depth. Underlying the topsoil ranges from a clay – silty clay – silt material.

The Ontario Ministry of Agriculture publishes a Soils Map for the County of Prince Edward. According to the Soils Map, there are three types of soils on the subject property. The site is predominantly covered by the 'Pontypool' series, described as a sand to sandy loam soil. There are small portions of 'Ameliasburgh' and 'Farmington' series as well. These are described as loam and sandy loam. This is generally consistent with the findings of the geotechnical report.

Soils have been assigned to Hydrologic Soils Group 'C', providing good drainage. Supporting information is included in **Appendix A**.

1.4 Design Criteria

Based on the size and function of the proposed development (Refer to Figure 2 for the Preliminary Site Plan), two (2) extended detention wet pond facilities have been selected as an appropriate best management practice for stormwater control. The Municipality will need to issue an Environmental Compliance Approval (CLI-ECA) for the facility. As such, design criteria have been considered based on the MECP Stormwater Management Planning and Design Manual (2003).

From these guidelines, the following design principles have been considered:

- Quantity control mitigation measures to ensure post development discharge rates do not exceed pre-development rates.
- Quality control mitigation measures to provide 'level 1', or enhanced, treatment of the 25mm quality rainfall event,

Water quantity and quality controls are thoroughly detailed in the MOE Design Manual for extended detention wet ponds.

2.0 STORM DRAINAGE

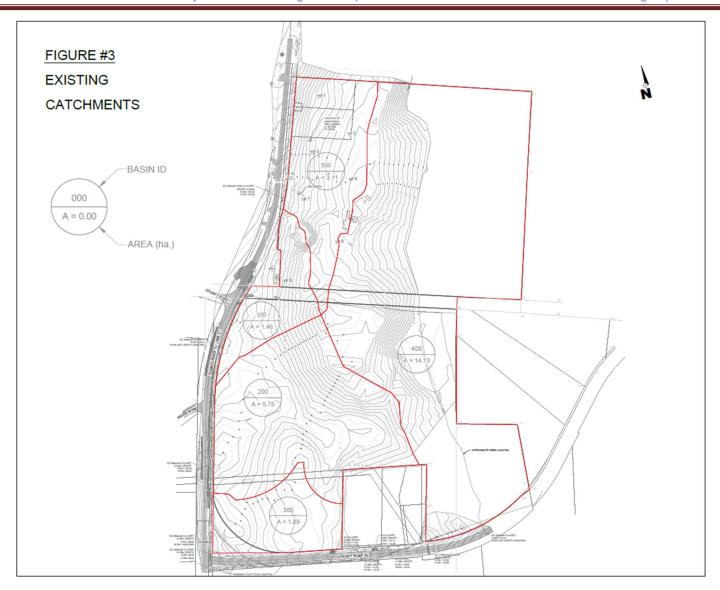
2.1 Existing Storm Drainage and Model Parameters

SWMHYMO Modeling software has been selected for modeling stormwater conditions. SWMHYMO generates rainfall hyetographs based on Intensity-Duration-Frequency (IDF) curve data that is inputted by the user. The Ministry of Transportation of Ontario (MTO) publishes IDF curve data for rainfall in the province. The MTO IDF curve data can be referred to in **Appendix 'A'** of this report.

2.2 Pre-development Conditions

The predevelopment site has been divided into five distinct sub-catchments; as outlined on the Predevelopment Storm Drainage Area Plan in **Figure 3**. For the purposes of this draft stormwater review only the internal catchments have been assessed to determine stormwater facility block sizing. The detailed report will evaluate external drainage for the purposes of conveyance and pond overflow requirements.

Under predevelopment conditions the area is undeveloped. The NASHYD watershed command is effective for modeling rural areas with high levels of infiltration. This command uses the Nash instantaneous unit hydrograph method to determine the outflow hydrograph and corresponding peak flow rates. The hydrograph is calculated based on a series of 'N' reservoirs. When $T_p = 0.67\ T_c$, N = 3, and this is considered appropriate based on rainfall measurements in Ontario. Infiltration is calculated based on the SCS Curve Number (CN) method for loss. Selected composite CN values (MTO Drainage Management Manual), and time to peak calculations for each sub-catchment are included in Appendix A.



2.3 Proposed Conditions

The post development site has been divided into 5 sub-catchment areas, similar to the pre-development area.

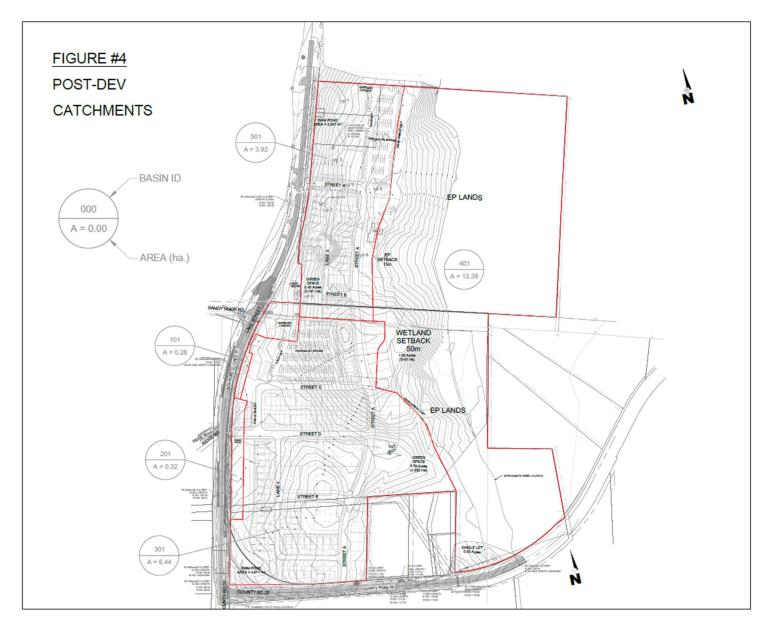
Areas that will undergo development have been assigned the STANDHYD command, which uses parallel instantaneous unit hydrographs for the impervious and pervious areas of the catchment to predict the resulting outflow hydrograph and peak flows. Infiltration is calculated based on the SCS Curve Number (CN) method for loss.

The basins have been assigned a conservative (higher than expected) % imperviousness for the preliminary pond sizing in support of draft plan approval. During detailed design the %imperviousness will be further refined. The following outines the imperviousness assigned to each catchment;

- 101 60%
- 201 60%
- 301 55%
- 401 5%*
- 501 65%

*The imperviousness is reflected in the modelling with an increased CN as the NASHYD command does not have an input for imperviousness, and the STANDHYD command is not appropriate for flows less than 20%.

Further reference to these catchments can be made from the Post Development Storm Drainage Area Plan, shown in **Figure 4**.



2.4 Rainfall Distribution

Several rainfall distributions have been evaluated to determine the representative storm to be used for pond sizing. The following distributions were considered.

- 1 hr Chicago
- 4 hr Chicago
- 6 hr SCS Type II
- 12 hr SCS Type II
- 12 hr AES (30%)

100 year pre-development and post development estimates were generated using SWMHYMO for all areas, and pond volume estimates generated to determine the distribution that generate the largest storage requirement for the 5 catchment areas. The following Tables summarizes the findings.

Table 1 – 100 Year Storage Review – '100' areas

	Pre-Dev.	Post Dev.	Storage
Distribution	(cms)	(cms)	(ha.m)
1 hr Chicago	0.111	0.112	-
4 hr Chicago	0.149	0.122	-
6 hr SCS	0.123	0.034	-
12 hr SCS	0.139	0.036	-
12 hr AES	0.051	0.013	-

Table 2 – 100 Year Storage Review – '200' areas

	Pre-Dev.	Post Dev.	Storage
Distribution	(cms)	(cms)	(ha.m)
1 hr Chicago	0.360	0.134	-
4 hr Chicago	0.478	0.143	-
6 hr SCS	0.455	0.039	-
12 hr SCS	0.523	0.041	-
12 hr AES	0.196	0.015	-

Table 3 - 100 Year Storage Review - '300' areas

	Pre-Dev.	Post Dev.	Storage
Distribution	(cms)	(cms)	(ha.m)
1 hr Chicago	0.220	1.895	0.2619
4 hr Chicago	0.289	2.379	0.4374
6 hr SCS	0.191	0.977	0.5001
12 hr SCS	0.211	1.054	0.6467
12 hr AES	0.076	0.393	0.6467

Table 4 - 100 Year Storage Review - '400' areas

	Pre-Dev.	Post Dev.	Storage		
Distribution	(cms)	(cms)	(ha.m)		
1 hr Chicago	0.516	0.509	-		
4 hr Chicago	0.678	0.667	-		
6 hr SCS	0.776	0.761	-		
12 hr SCS	0.929	0.908	-		
12 hr AES	0.395	0.387	-		

Table 5 – 100 Year Storage Review – '500' areas

	Pre-Dev.	Post Dev.	Storage
Distribution	(cms)	(cms)	(ha.m)
1 hr Chicago	0.162	1.141	0.1303
4 hr Chicago	0.217	1.265	0.2120
6 hr SCS	0.212	0.470	0.2428
12 hr SCS	0.248	0.504	0.3116
12 hr AES	0.092	0.187	0.3116

It can be seen in the above table that the 12 hr SCS and 12hr AES distributions generated the greatest storage requirement. However the AES generated lower pre-development rates, as such the 12 hr AES event has been selected as the representative distribution and the 2 year through 100 year rainfalls have been evaluated for the pre-development and post development conditions.

2.5 Existing Drainage Summary

The following table summarizes the SWMHYMO model peak flow rates for the 12hr AES distribution for each sub-catchment under each storm event. The model output can be referred to in Appendix 'B' of this report.

	rable to 12 in 7.20 i to 20 to to pinone i to 10 (in 70)							
Event	100	200	300	400	500			
2 year	0.013	0.051	0.022	0.102	0.023			
5 year	0.022	0.085	0.035	0.166	0.038			
10 year	0.029	0.110	0.045	0.214	0.050			
25 year	0.037	0.143	0.057	0.282	0.066			
50 year	0.044	0.169	0.066	0.337	0.78			
100 year	0.051	0.196	0.076	0.395	0.092			

Table 6 - 12 hr AES Pre-Development Flows (m³/s)

2.6 Proposed Storm Drainage Summary

2.6.1 Uncontrolled Drainage

Areas 101, 201, and 401 represent the developed portion of the site that cannot be controlled at the ponds due to grading constraints. Flows from 101, and 201 will discharge to the municipal ditching on County Rd 10 prior to reaching the existing culverts, and flows from 401 will drain to the existing creek. As outlined in section 2.4 the post development flows are expected to be less than the pre-development rates for all distributions, as such no stormwater quantity mitigation is required for these portions of the development.

2.6.2 Pond Inflows and Allowable Release Rates

Area 301, and 501 represent the developed site areas that will ultimately outlet to the proposed stormwater management ponds. Stormwater quantity controls for design of the ponds are discussed in Section 3.2 below.

3.0 STORMWATER MANAGEMENT

3.1 Water Quality

Water Quality objectives have been taken from the Bay of Quinte RAP which indicates the required level of protection as 'Enhanced'. Enhanced protection corresponds to the end-of-pipe storage volumes required for the long-term average annual removal of 80% of suspended solids.

Table 3.2 of the Manual summarizes the volumetric water quality storage requirements, an excerpt of which has been provided below:

Protection Level	SWMP Type	Storage Volume (m³/ha) for		³ /ha) for	
		Impervious Level		vel	
		35%	55%	70%	85%
Enhanced 80%	Infiltration	25	30	35	40
long-term S.S.	Wetlands	80	105	120	140
removal	Hybrid Wet Pond/ Wetland	110	150	175	195
	Wet Pond	140	190	225	250

Area 301 will contribute to the stormwater pond to the south, while 501 will drain to the northern pond.

The total contributing area to the southern pond is 8.44 hectares, with an estimated imperviousness of 55%. Applying the storage volume requirement of 190 m³/ha results in a total water quality storage volume of 1,613.6 m³. Of this, 40 m³/ha is extended detention. The water quality volume is therefore comprised of 337.6 m³ for extended detention storage and 1,266 m³ for permanent pool storage.

The total contributing area to the northern pond is 3.92 hectares, with an estimated imperviousness of 65%. Applying the storage volume requirement of 213.3 m³/ha results in a total water quality storage volume of 836.1 m³. Of this, 40 m³/ha is extended detention. The water quality volume is therefore comprised of 156.8 m³ for extended detention storage and 679.3 m³ for permanent pool storage.

Area 101 will include some road areas and should be reviewed during detailed design to determine is an oil grit unit should be implemented.

Area 201 is expected to consist of only rootop and rear yard runoff and as such would be relatively clean and would not require any quality treatment.

Area 501 will consist of only residential rooftop and rear yard runoff and as such would be relatively clean and would not require any quality treatment.

3.1.1 Permanent Pool Sizing

In following the MOE Design Manual, equations 4.5, 4.6. and 4.7, the forbay sizing for each pond has been determined as follows;

- Pond 301: minimum length of 9.04m, a bottom width of 1.13m, and a depth of 1.0m
- Pond 501: minimum length of 6.53m, a bottom width of 0.82m, and a depth of 1.0m

Appendix 'C' provides the calculations.

To prevent seepage of stormwater from the permanent pools or groundwater interception, a liner will need to be installed along each pond bottom, extending to above the height of the extended detention quality depth.

3.1.2 Extended Detention Quality Storage Sizing

Utilizing a stage-storage-discharge (SSD) relationship and the Route Reservoir command in SWMHYMO a 24hr draw down volume of 939.1m³ has been estimated for Pond 301, and 476.4 m³ for Pond 501. These exceed the volume recommended by Table 3.2 of the MOE manual and therefore governs.

A depth of 0.3m, controlled with a 100mm orifice is required to achieve the target 0.012m³/s 24hr draw down for Pond 301, and a depth of 0.3m, controlled with a 75 mm orifice is required to achieve the target 0.006 m³/s 24hr draw down for Pond 501.

Refer to Appendix 'B' for the stage-storage-discharge relationships.

3.2 Water Quantity

The ROUTERESERVOIR command was used to model the proposed ponding scenario (SSD) for all storms ranging from the 2-year up to and including the 100-year AES event. Table 3 and 4 below summarizes the uncontrolled runoff from Area 301 and Area 501, pond release rates, and post development outflows for storm events ranging from the 2-year up to and including the 100-year storm from the 2 proposed ponds.

Table 7 – Post Develo	pment Flows	$(m^3/s) -$	Pond 301
-----------------------	-------------	-------------	----------

	Pre-Dev	Post - uncontrolled	Post Controlled	Storage required
2 year	0.022	0.137	0.038	1762
5 year	0.035	0.203	0.050	2580
10 year	0.045	0.248	0.057	3159
25 year	0.057	0.304	0.065	3908
50 year	0.066	0.348	0.070	4496
100 year	0.076	0.393	0.075	5113

The outlet for the quantity events will be controlled by a combination of the quality orifice (100mm) and a quantity orifice (140mm). The total storage volume required is 5,113m³ at a total active depth of 1.7m.

An overflow weir and 0.3m freeboard has been sized at a width of 8.5m.

Table 8 - Post Development Flows (m³/s) - Pond 501

	Pre-Dev	Post - uncontrolled	Post Controlled	Storage required
2 year	0.023	0.068	0.041	666.5
5 year	0.038	0.099	0.057	867.1
10 year	0.050	0.120	0.067	1056
25 year	0.066	0.146	0.078	1285
50 year	0.078	0.167	0.085	1471
100 year	0.092	0.187	0.093	1669

The outlet for the quantity events will be controlled by a combination of the quality orifice (75mm) and a quantity orifice (207mm). The total storage volume required is 1669m³ at a total active depth of 1.2m.

An overflow weir and 0.3m freeboard has been sized at a width of 4.2m.

The preliminary modelling for both facilities is showing the discharge in the 2 year to 50 year events will exceed predevelopment flows. Further assessment is required at detailed design to refine the modelling and final pond geometry and outlet control.

Refer to Appendix 'B' for the stage-storage-discharge relationship that was generated for the pond.

3.3 Groundwater Impacts

Per QC's SWM manual (section 1.1.8) a review of groundwater impacts is required to ensure a facility does not create adverse impacts. As outlined in Section 3.1.1 a clay liner is recommended in the permanent pool portion of the ponds to prevent both seepage from the pond into the groundwater and interception of the groundwater table.

Additionally, it is recommended that through detailed design and construction LID measures be implemented as best possible to provide opportunities for surface runoff to be infiltrated into the groundwater regime. The follow measures are to be implemented in the detailed grading plan;

- Roof top leaders to pervious surfaces
- Reduced lot grading, where feasible
- Vegetated side yard and rear yard swales
- Major conveyance swales to be enhanced with flat bottoms and check dams

Some of the above mentioned measures may require additional design justification during detailed design of the development.

4.0 Maintenance

Based on the annual loading rates provided in the MOE manual it has been estimated that both ponds forebays will require cleanout on a minimum 10 year cycle and the main cells should have a clean out on a minimum 20 year cycle.

The permanent pool portions of the forebay and main pond were sized with consideration for the loss of storage volume based on accumulated sediment.

Supporting calculations are provided in Appendix D.

A O&M manual should be provided prior to request for Municipal assumption.

5.0 Temporary Erosion and Sedimentation Controls

An erosion and sediment control strategy will be implemented as per the plan included in the drawing package in order to minimize the transfer of silt off site during construction. The following measures should be incorporated into the strategy as required:

- Environmental fencing and straw bales
- Regular inspection of the erosion and sediment control devices
- Removal & disposal of the erosion and sediment control devices after the site has been stabilized
- Removal of sediment from pond prior to request for municipal assumption
- All exposed earth to be re-vegetated

6.0 Conclusions

- Quality control is provided in two (2) wet pond facilities that will achieve a level 1 (enhanced) treatment.
- Quantity control is required in the facilities to control discharge from the ponds to ensure the total discharge from the development limits is maintained to pre-development levels.
- Silt fencing and straw bale barriers will be in place during construction.
- The forebays will require removal of accumulated sediment on a 10 year cycle and the main cells should have a cleanout on a minimum 20 year cycle.

Respectfully Submitted,



Adam Wilson, P.Eng WSE Consulting Inc.





Active coordinate

43° 59' 15" N, 77° 9' 15" W (43.987500,-77.154167)

Retrieved: Tue, 29 Aug 2023 12:30:28 GMT



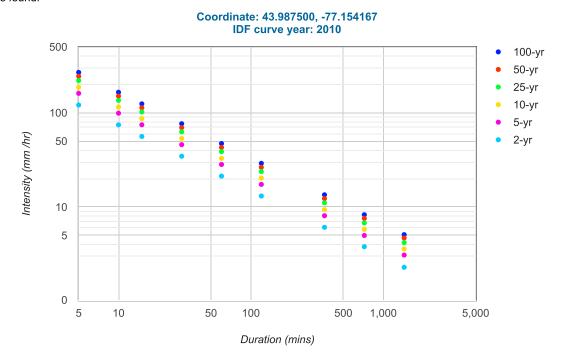
Location summary

These are the locations in the selection.

IDF Curve: 43° 59' 15" N, 77° 9' 15" W (43.987500,-77.154167)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 43° 59' 15" N, 77° 9' 15" W (43.987500,-77.154167)

Retrieved: Tue, 29 Aug 2023 12:30:28 GMT

Data year: 2010 IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Α	21.3	28.3	32.9	38.7	42.9	47.2
В	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr⁻¹)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	121.0	74.5	56.1	34.6	21.3	13.1	6.1	3.8	2.3
5-yr	160.7	99.0	74.6	45.9	28.3	17.4	8.1	5.0	3.1
10-yr	186.9	115.1	86.7	53.4	32.9	20.3	9.4	5.8	3.6
25-yr	219.8	135.4	102.0	62.8	38.7	23.8	11.1	6.8	4.2
50-yr	243.7	150.1	113.1	69.6	42.9	26.4	12.3	7.6	4.7
100-yr	268.1	165.1	124.4	76.6	47.2	29.1	13.5	8.3	5.1

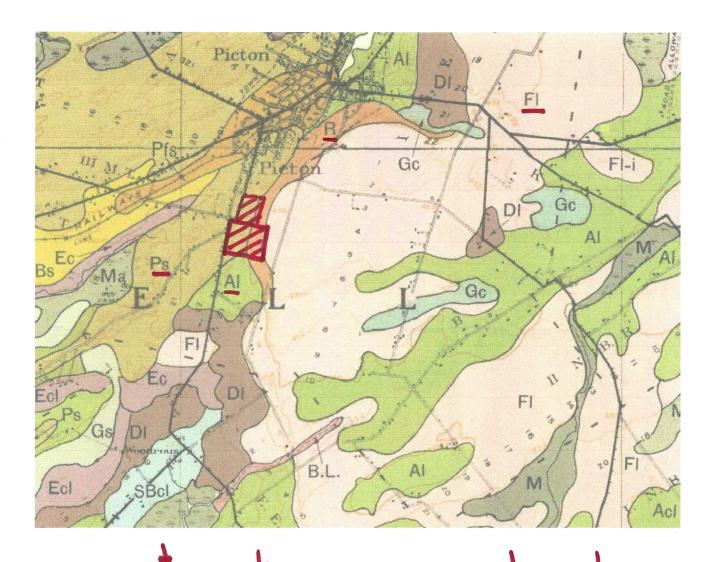
Rainfall depth (mm)

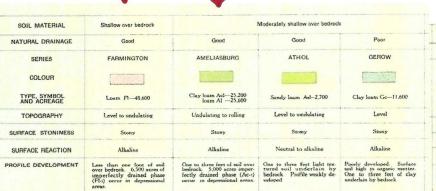
Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	10.1	12.4	14.0	17.3	21.3	26.2	36.5	45.0	55.4
5-yr	13.4	16.5	18.6	23.0	28.3	34.9	48.5	59.8	73.7
10-yr	15.6	19.2	21.7	26.7	32.9	40.5	56.4	69.5	85.6
25-yr	18.3	22.6	25.5	31.4	38.7	47.7	66.4	81.8	100.7
50-yr	20.3	25.0	28.3	34.8	42.9	52.9	73.6	90.6	111.7
100-yr	22.3	27.5	31.1	38.3	47.2	58.2	80.9	99.7	122.9

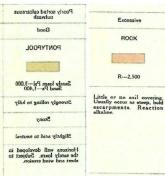
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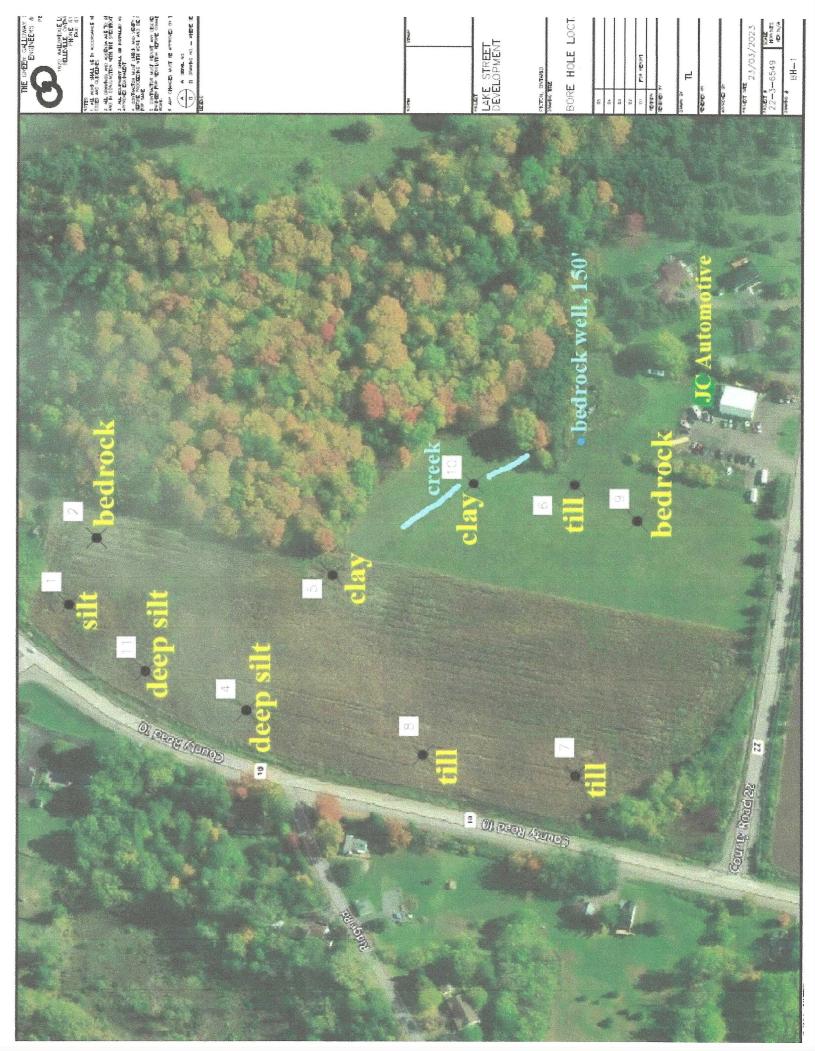
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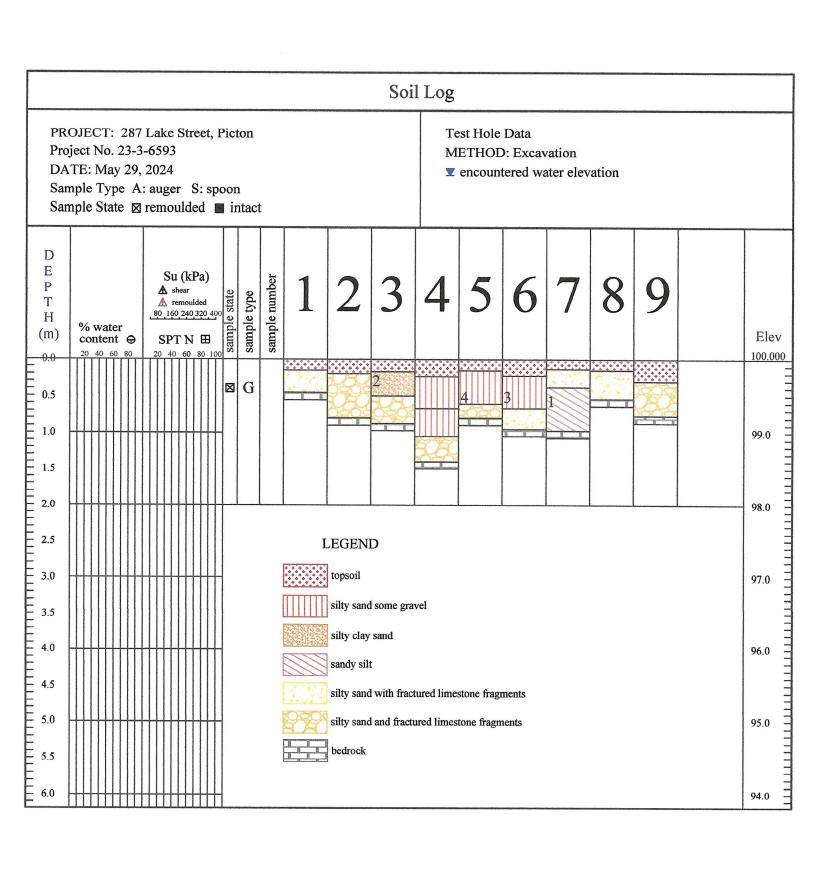








Google Overhead Photo of Site



Design Chart 1.08: Hydrologic Soil Groups (Continued)

- Based on Soil Texture

Sands, Sandy Loams and Gravels	
- overlying sand, gravel or limestone bedrock, very well drained	A
- ditto, imperfectly drained	AB
- shallow, overlying Precambrian bedrock or clay subsoil	В
Medium to Coarse Loams	
- overlying sand, gravel or limestone, well drained	AB
- shallow, overlying Precambrian bedrock or clay subsoil	В
Medium Textured Loams	
- shallow, overlying limestone bedrock	В
- overlying medium textured subsoil	BC
Silt Loams, Some Loams	
- with good internal drainage	BC
- with slow internal drainage and good external drainage	C
Clays, Clay Loams, Silty Clay Loams	
- with good internal drainage	(2)
- with imperfect or poor external drainage	C
- with slow internal drainage and good external drainage	D

Source: U.S. Department of Agriculture (1972)

Design Chart 1.09: Soil Conservation Service Curve Numbers (Continued)

Land Use or Surface	Hydrologic Soil Group									
	Α	AB	В	BC	C	CD	D			
Fallow (special cases only)	77	82	86	89	91	93	94			
Crop and other improved land	66** (62)	70** (68)	74	78	82	84	86 AMC I			
Pasture & other unimproved land	58* (38)	62* (51)	65	71	76	79	81			
Woodlots and forest	50* (30)	54* (44)	58	65	71	74	77			
Impervious areas (paved)							98			
Bare bedrock draining dire							98			
Bare bedrock draining indi	ectly to sti	ream as gr	oundwate	er (usual c	ase)		70			
Lakes and wetlands							50			

Notes

- (i) All values are based on AMC II except those marked by * (AMC III) or ** (mean of AMC II and AMC III).
- (ii) Values in brackets are AMC II and are to be used only for special cases.
- (iii) Table is not applicable to frozen soils or to periods in which snowmelt contributes to runoff.

Design Chart 1.07: Runoff Coefficients (Continued)

- Rural

Land Use & Topography ³		Soil Texture		
	Open Sand Loam	Loam or Silt Loam	Clay Loam or Clay	
CULTIVATED				1
Flat 0 - 5% Slopes	0.22	0.35	0.55	
Rolling 5 - 10% Slopes	0.30	0.45	0.60	0.53
Hilly 10- 30% Slopes	0.40	0.65	0.70	
PASTURE				
Flat 0 - 5% Slopes	0.10	0.28	0.40	
Rolling 5 - 10% Slopes	0.15	0.35	0.45	
Hilly 10- 30% Slopes	0.22	0.40	0.55	
WOODLAND OR CUTOVER				
Flat 0-5% Slopes	0.08	0.25	0.35	- 1
Rolling 5 - 10% Slopes	0.12	0.30	0.42	0.36
Hilly 10- 30% Slopes	0.18	0.35	0.52	
BARE ROCK	C	COVERAGE ³		
	30%	50%	70%	
Flat 0 - 5% Slopes	0.40	0.55	0.75	
Rolling 5 - 10% Slopes	0.50	0.65	0.80	
Hilly 10- 30% Slopes	0.55	0.70	0.85	
LAKES AND WETLANDS		0.05		,

² Terrain Slopes

Sources: American Society of Civil Engineers - ASCE (1960)

U.S. Department of Agriculture (1972)

Interpolate for other values of % imperviousness

Time to Peak Calculation

```
RC
CN
                  0.445 (50% @ 0.36, 50% @ 0.53)
76.5 (50% @ 71, 50% @ 82)
length
                    260 m
                    0.26 km
width
                          m
```

5.7 % slope area 1.46 ha 0.0146 sq. km

Airport Method tc=[3.26(1.1-RC)*L^0.5] / [s^0.333]

tc= 19.2859 min 0.32143 hr 11.5715 min 0.19286 hr tp=

RC CN 0.445 (50% @ 0.36, 50% @ 0.53) 76.5 (50% @ 71, 50% @ 82) 320 m length

0.32 km width m 3.1 % slope 5.74 ha 0.0574 sq. km area

Airport Method tc=[3.26(1.1-RC)*L^0.5] / [s^0.333]

tc= 26.2066 min 0.43678 hr 15.724 min 0.26207 hr tp=

300

RC 0.53 CN 82 190 m length 0.19 km m 6.3 % width slope 1.89 ha area 0.0189 sq. km

Airport Method tc=[3.26(1.1-RC)*L^0.5] / [s^0.333]

tc= 13.8768 min 0.23128 hr 8.32607 min 0.13877 hr tp=

RC 0.36 CN 685 m 0.685 km length width m 2.77 % slope 13.97 ha area 0.1397 sq. km

Airport Method tc=[3.26(1.1-RC)*L^0.5] / [s^0.333]

tc= 44.9727 min 0.74954 hr 26.9836 min 0.44973 hr tp=

RC

0.36 71 CN length 365 m 0.365 km width m 5.8 % slope 3.11 ha 0.0311 sq. km area

Airport Method tc=[3.26(1.1-RC)*L^0.5] / [s^0.333]

25.6669 min 0.42778 hr tc= 15.4002 min 0.25667 hr tp=



```
A single event and continuous hydrologic simulation model based on the principles of HVMO and its successors OTTHYMO-83 and OTTHYMO-89.
 **************************
++++++ PROGRAM ARRAY DIMENSIONS +++++
Maximum value for ID numbers : 10
Max. number of rainfall points: 15000
Max. number of flow points : 15000
 * Input filename: C:\SWMHYM~1\LAKEST~1\100year.dat
* Output filename: C:\SWMHYM~1\LAKEST~1\100year.out
 * Summary filename: C:\SWMHYM~1\LAKEST~1\100year.sum
* User comments:
001:0001------
* Project Name: [Lake Street] Project Number: 2022

* Number: 2022

* Modeller []

* Compan;

* License # :
        | Project dir.: C:\SWMHYM~1\LAKEST~1\
----- Rainfall dir.: C:\SWMHYM~1\LAKEST~1\
  TZERO = .00 hrs on 0
METOUT= 2 (output = METRIC)
   NRUN = 001
NSTORM= 0
001:0002-----
                               Existing Condition
* 100 year event - 1 hr Chicago
                  | IDF curve parameters: A= 971.139
 Ptotal= 48.81 mm |
                      B= 1.500

C= .726

used in: INTENSITY = A / (t + B) ^{\circ}C
                       Duration of storm = 1.00 hrs
Storm time step = 2.00 min
Time to peak ratio = .33
                   The CORRELATION coefficient is = .9996862
                                ENTERED
                                                   COMPUTED
                    (min)
                                 (mm/hr)
268.10
                     5.
10.
                                  165.10
                                                      164.90
                     15.
30.
60.
120.
360.
720.
                                  124.40
                                                     126.88
                                                       79.34
48.82
29.78
13.49
8.17
                                  76.60
47.20
                                  29.10
13.50
8.30
                   1440.
                                   5.10
                                                        4.94
                              TIME RAIN |
hrs mm/hr |
.30 121.721 |
.33 391.100 |
.37 155.358 |
                                               TIME RAIN |
hrs mm/hr |
.57 32.195 |
.60 28.944 |
.63 26.366 |
              TIME RAIN |
hrs mm/hr |
.03 15.562 |
.07 17.083 |
.10 19.009 |
```

```
001:0003-----
* Area 100
 CALIB NASHID | Area (ha)= 1.46 Curve Number (CN)=76.50 01:100 DT=2.00 | Ia (mm)= 4.000 $ of Linear Res.(N)= 3.00 U.H. Tp(hrs)= .192
 CALIB NASHYD
    Unit Hyd Qpeak (cms) = .290
   PEAK FLOW (cms) = .111 (i)
TIME TO PEAK (hrs) = .600
RUNOFF VOLUME (mm) = 16.344
TOTAL RAINFALL (mm) = 48.806
RUNOFF COEFFICIENT = .335
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0004-----
* Area 200
Unit Hyd Qpeak (cms) = .838
   PEAK FLOW (cms) = .360 (i)
TIME TO PEAK (hrs) = .700
RUNOFF VOLUME (mm) = 16.344
TOTAL RAINFALL (mm) = 48.806
RUNOFF COEFFICIENT = .335
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0005-----
* Area 300
Unit Hyd Qpeak (cms) = .519
   PEAK FLOW (cms) = .220 (i)
TIME TO PEAK (hrs) = .500
RUNOFF VOLUME (mm) = 19.964
TOTAL RAINFALL (mm) = 48.806
RUNOFF COEFFICIENT = .409
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0006-----
* Area 400
Unit Hyd Qpeak (cms) = 1.199
   PEAK FLOW (cms) = .516 (i)
TIME TO PEAK (hrs) = .967
RUNOFF VOLUME (mm) = 13.514
TOTAL RAINFALL (mm) = 48.806
RUNOFF COEFFICIENT = .277
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Area 500
```

```
PEAK FLOW (cms)= .162 (i)
TIME TO PEAK (hrs)= .700
RUNOFF VOLUME (mm)= 13.514
TOTAL RAINFALL (mm)= 48.806
RUNOFF COEFFICIENT = .277
                  (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
 0.01 - 0.0.08------
  * 100 year event - 4 hr Chicago
    CHICAGO STORM | IDF curve parameters: A= 971.139

Ptotal= 72.33 mm | B= 1.500

C= .726

used in: INTENSITY = A / (t + B)^C
                                                                                      Duration of storm = 4.00 hrs
Storm time step = 2.00 min
Time to peak ratio = .33
                                                                         The CORRELATION coefficient is = .9996862
                                                                                                                            ENTERED
                                                                                                                                                                                                    COMPUTED
                                                                               TIME
                                                                            (min)
                                                                                                                                 (mm/hr)
                                                                                                                                 268.10
                                                                                                                                                                                                           249.52
                                                                                5.
10.
15.
30.
60.
120.
360.
720.
                                                                                                                                165.10
124.40
                                                                                                                                                                                                 164.90
126.88
79.34
48.82
29.78
                                                                                                                                    76.60
47.20
                                                                                                                                   29.10
                                                                            1440.
                                                                                RAIN |
                                                                                                                 TIME RAIN | TIME RAIN | TIME
                                                                                                                                                                               hrs mm/hr | 2.03 | 13.687 | 2.07 | 13.212 | 2.10 | 12.774 | 2.13 | 12.369 | 2.17 | 1.993 | 2.20 | 11.644 | 2.23 | 11.317 | 2.27 | 11.011 | 2.30 | 10.725 | 2.33 | 0.455 |
                                                                                                                hrs mm/hr |

1.03 15.562 |

1.07 17.083 |

1.10 19.009 |

1.13 21.539 |

1.17 25.035 |
                                                     hrs mm/hr | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 
                                                                                                                                                                                                                                                      hrs
                                                                                                                 1.20 30.231 |
1.23 38.904 |
1.27 56.826 |
1.30 121.721 |
                                                                                                                                                                                                                                                   3.20
                                                                                                                                                                                                                                                                             6.567
                                                                                                                                                                                  2.30 10.725 |
2.33 10.455 |
2.37 10.201 |
2.40 9.961 |
                                               001:0009-----
 * Area 100
  | CALIB NASHYD | Area (ha) = 1.46 Curve Number (CN) =76.50 | 101:100 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 | U.H. Tp(hrs) = .192
                 Unit Hyd Qpeak (cms)= .290
                 PEAK FLOW (cms) = .149 (i)
TIME TO PEAK (hrs) = 1.567
```

Unit Hyd Qpeak (cms) = .462

RUNOFF VOLUME (mm) = 31.904 TOTAL RAINFALL (mm) = 72.334 RUNOFF COEFFICIENT = .441 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. CALTE NASHYD Unit Hyd Qpeak (cms) = .838 PEAK FLOW (cms)= .478 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 31.904
TOTAL RAINFALL (mm)= 72.334
RUNOFF COEFFICIENT = .441 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. * Area 300 Unit Hyd Qpeak (cms) = .519 PEAK FLOW (cms)= .289 (i)
TIME TO PEAK (hrs)= 1.500
RINOFF VOLUME (mm)= 37.630
TOTAL RAINFALL (mm)= 72.334
RUNOFF COEFFICIENT = .520 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 001:0012-----* Area 400 Unit Hyd Qpeak (cms) = 1.199 PEAK FLOW (cms) = .678 (1)
TIME TO PEAK (hrs) = 1.933
RUNOFF VOLUME (mm) = 27.136
TOTAL RAINFALL (mm) = 72.334
RUNOFF COEFFICIENT = .375 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 001:0013-----* Area 500 Unit Hyd Qpeak (cms) = .462 PEAK FLOW (cms)= .217 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 27.136
TOTAL RAINFALL (mm)= 72.334
RUNOFF COEFFICIENT = .375 (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
* 100 year - 6hr SCS Type II
 | READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\100SCS6
| Ptotal= 80.90 mm| Comments: 100year SCS 6hr
                                  TIME RAIN | TIME R
                                hrs mm/hr | hrs mm/hr | hrs mm/hr | 1.00 5.259 | 3.00 50.563 | 5.00 4.045 | 2.00 7.686 | 4.00 10.113 | 6.00 3.236 |
                                                                                                                                                             hrs mm/hr
001:0015-----
* Area 100
| CALIB NASHYD | Area (ha)= 1.46 Curve Number (CN)=76.50 | 01:100 DT=2.00 | Ia (mm)= 4.000 # of Linear Res.(N)=3.00 | U.H. Tp(hrs)= .192
           Unit Hyd Qpeak (cms) = .290
         PEAK FLOW (cms) = 1.23 (i)
TIME TO PEAK (hrs) = 3.033
RUNOFF VOLUME (mm) = 38.170
TOTAL RAINFALL (mm) = 80.900
RUNOFF COEFFICIENT = .472
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0016-----
* Area 200
 Unit Hyd Qpeak (cms) = .838
         PEAK FLOW (cms) = .455 (i)
TIME TO PEAK (hrs) = 3.067
RINOFF VOLUME (mm) = 38.171
TOTAL RATFALL (mm) = 80.900
RUNOFF COEFFICIENT = .472
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0017-----
* Area 300
  Unit Hyd Qpeak (cms) = .519
         PEAK FLOW (cms) = 1.91 (i)
TIME TO PEAK (hrs) = 3.000
RINOFF VOLUME (mm) = 44.579
TOTAL RAINFALL (mm) = 80.900
RUNOFF COEFFICIENT = .551
            (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0018-----
* Area 400
  Unit Hyd Qpeak (cms) = 1.199
          PEAK FLOW (cms) = .776 (i)
TIME TO PEAK (hrs) = 3.200
RUNOFF VOLUME (mm) = 32.736
TOTAL RAINFALL (mm) = 80.900
RUNOFF COEFFICIENT = .405
            (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
001:0019-----
 * Area 500
 | CALIB NASHUD | Area (ha) = 3.11 Curve Number (CN) = 71.00 | 05:500 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .257
           Unit Hyd Qpeak (cms) = .462
           PEAK FLOW (cms) = .212 (i)
TIME TO PEAK (hrs) = 3.067
RUNOFF VOLUME (mm) = 32.736
TOTAL RAINFALL (mm) = 80.900
RUNOFF COEFFICIENT = .405
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* 100 year - 12hr SCS Type II
 | READ STORM
   | READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\100SCS12
| Ptotal= 99.70 mm| Comments: 100year SCS 12hr
                                TIME RAIN | TIME RAIN | TIME
                                 | Schan | 1000 | Scha
001:0021-----
* Area 100
 Unit Hyd Qpeak (cms)= .290
          PEAK FLOW (cms)= .139 (i)
TIME TO PEAK (hrs)= 6.033
RUNOFF VOLUME (mm)= 52.718
TOTAL RAINFALL (mm)= 99.700
RUNOFF COEFFICIENT = .529
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0022-----
* Area 200
| CALIB NASHD | Area (ha) = 5.75 Curve Number (CR) -76.50 | 102:200 DT = 2.00 | Ia (mm) = 4.000  # of Linear Res (N) = 3.00 | U.H. Tp(hrs) = .262
           Unit Hyd Qpeak (cms)= .838
         PEAK FLOW (cms) = .523 (i)
TIME TO PEAK (hrs) = 6.033
RUNOFF VOLUME (mm) = 52.718
TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = .529
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
0.01 : 0.023 ------
 * Area 300
    | CALIB NASHYD
        Unit Hyd Qpeak (cms) = .519
```

```
PEAK FLOW (cms)= .211 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 60.470
TOTAL RAINFALL (mm)= 99.700
              RUNOFF COEFFICIENT =
             (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Area 400
  | CALIB NASHTD | Area (ha) = 14.13 Curve Number (CN) =71.00 | 04:400 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .450
             Unit Hyd Qpeak (cms) = 1.199
           PEAK FLOW (cms) = .929 (i)
TIME TO PEAK (hrs) = 6.167
RUNOFF VOLUME (mm) = 45.920
TOTAL RATNFALL (mm) = 99.700
RUNOFF COEFFICIENT = .461
             (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0025-----
* Area 500
 | CALIB NASHYD | Area (ha)= 3.11 Curve Number (CN)=71.00 | 105.550 DT= 2.00 | Ia (mm)= 4.000 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= .257
            Unit Hyd Qpeak (cms) = .462
           PEAK FLOW (cms) = .248 (1)
TIME TO PEAK (hrs) = 6.033
RINOFF VOLUME (mm) = 45.920
TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = .461
              (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0026-----
* 2 year - 12hr AES
   | READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\2AES12.stm
| Ptotal= 44.80 mm | Comments: 2 year AES 12hr
                                       TIME RAIN | TIME R
001:0027-----
* Area 100
  | CALIB MASHYD | Area (ha)= 1.46 Curve Number (CN)=76.50 | 01:100 DT= 2.00 | Ia (mm)= 4.000 # of Linear Res.(N)= 3.00 U.H. Tp(hs)= 1.192
            Unit Hyd Qpeak (cms) = .290
             PEAK FLOW (cms) = .013 (i)
TIME TO PEAK (hrs) = 3.033
RUNOFF VOLUME (mm) = 14.009
TOTAL RAINFALL (mm) = 44.800
RUNOFF COEFFICIENT = .313
              (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Area 200
```

```
Unit Hyd Qpeak (cms) = .838
          PEAK FLOW (cms) = .051 (i)
TIME TO PEAK (hrs) = 3.100
RUNOFF VOLUME (mm) = 14.009
TOTAL RAINFALL (mm) = 44.800
RUNOFF COEFFICIENT = .313
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0029-----
* Area 300
Unit Hyd Qpeak (cms)= .519
          PEAK FLOW (cms) = .022 (i)
TIME TO PEAK (hrs) = 3.000
RUNOFF VOLUME (mm) = 17.240
TOTAL RAINFALL (mm) = 44.800
RUNOFF COEFFICIENT = .385
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0030-----
* Area 400
Unit Hyd Qpeak (cms) = 1.199
         PEAK FLOW (cms) = .102 (i)
TIME TO PEAK (hrs) = 5.067
RUNOFF VOLUME (mm) = 11.516
TOTAL RAINFALL (mm) = 44.800
RUNOFF COEFFICIENT = .257
          (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0031-----
* Area 500
   CALIB NASHYD | Area (ha)= 3.11 Curve Number (CN)=71.00 05:500 DT= 2.00 | Ta (mm)= 4.000 # of Linear Res.(N)= 3.00 U.H. Tp(ms)= .257
           Unit Hyd Qpeak (cms) = .462
          PEAK FLOW (cms) = .023 (i)
TIME TO PEAK (hrs) = 5.033
RUNOFF VOLUME (mm) = 11.516
TOTAL RAINFALL (mm) = 44.800
RUNOFF COEFFICIENT = .257
            (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
0.01 : 0.0 32------
* 5year - 12hr AES
| READ STORM | Filename: C:\SWMHYM-1\LAKEST-1\5AES12.stm
| Ptotal= 59.60 mm | Comments: 5 year AES 12hr
| FOOLIA | 53.60 mm| FAIN | TIME | RAIN | TIME | TI
```

```
* Area 100
 Unit Hyd Qpeak (cms) = .290
     PEAK FLOW (cms) = .022 (1)
TIME TO PEAK (hrs) = 3.033
RUNOFF VOLUME (mm) = 23.134
TOTAL RAINFALL (mm) = 59.600
RUNOFF COEFFICIENT = .388
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0034-----
* Area 200
| CALIB NASHYD | Area (ha) = 5.75 Curve Number (CN) -76.50 | 02:200 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 | U.H. Tp(hrs) = .262
    PEAK FLOW (cms) = .085 (i)
TIME TO PEAK (hrs) = 3.067
RINNOFF VOLUME (mm) = 23.134
TOTAL RAINFALL (mm) = 59.600
RUNOFF COEFFICIENT = .388
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0035-----
* Area 300
 CALIE NASHYD | Area (ha)= 1.89 Curve Number (CN)=82.00 03:300 DT=2.00 | Ia (mm)= 4.000 # of Linear Res.(N)=3.00 U.H. Tp(hrs)= .139
     Unit Hyd Qpeak (cms)= .519
     PEAK FLOW (cms) = .035 (i)
TIME TO PEAK (hrs) = 3.000
RUNOFF VOLUME (mm) = 27.761
TOTAL RAINFALL (mm) = 59.600
RUNOFF COEFFICIENT = .466
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0036-----
* Area 400
| CALIB NASHUD | Area (ha) = 14.13 Curve Number (CN) = 71.00 | 04:400 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .450
     Unit Hyd Qpeak (cms) = 1.199
    PEAK FLOW (cms) = .166 (1)
TIME TO PEAK (hrs) = 5.067
RINOFF VOLUME (mm) = 19.400
TOTAL RAINFALL (mm) = 59.600
RUNOFF COEFFICIENT = .326
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Area 500
  CALIB NASHYD | Area (ha)= 3.11 Curve Number (CN)=71.00 05:500 DT= 2.00 | Ia (mm)= 4.000 # of Linear Res.(N)= 3.00
 CALIB NASHYD
    Unit Hyd Qpeak (cms) = .462
```

```
PEAK FLOW (cms)= .038 (i)
TIME TO PEAK (hrs)= 3.067
RUNOFF VOLUME (mm)= 19.400
TOTAL RAINFALL (mm)= 59.600
            RUNOFF COEFFICIENT =
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* 10 year - 12hr AES
   | READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\10AES12.stm | Ptotal= 69.30 mm| Comments: 10 year AES 12hr
                                TIME RAIN | TIME R
001:0039-----
  Unit Hyd Qpeak (cms)= .290
         PEAK FLOW (cms) = .029 (i)
TIME TO PEAK (hrs) = 3.033
RUNOFF VOLUME (mm) = 29.751
TOTAL RAINFALL (mm) = 69.300
RUNOFF COEFFICIENT = .429
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0040-----
    Area 200
Unit Hyd Qpeak (cms)= .838
         PEAK FLOW (cms) = .110 (i)
TIME TO PEAK (hrs) = 3.067
RUNOFF VOLUME (mm) = 29.751
TOTAL RAINFALL (mm) = 69.300
RUNOFF COEFFICIENT = .429
          (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0041-----
| CALIB NASHID | Area (ha)= 1.89 Curve Number (CN)=82.00 | 103:300 DT= 2.00 | Ia (mm)= 4.000 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= .139
           Unit Hyd Qpeak (cms) = .519
         PEAK FLOW (cms)= .045 (i)
TIME TO PEAK (hrs)= 3.000
RUNOFF VOLUME (mm)= 35.224
TOTAL RAINFALL (mm)= 69.300
RUNOFF COEFFICIENT = .508
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0042-----
* Area 400
```

```
CALIB NASHYO | Area (ha) = 14.13 Curve Number (CN) =71.00 (4400 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .450
     Unit Hyd Qpeak (cms) = 1.199
    PEAK FLOW (cms) = .214 (i)
TIME TO PEAK (hrs) = 3.267
RUNOFF VOLUME (mm) = 25.224
TOTAL RAINFALL (mm) = 69.300
RUNOFF COEFFICIENT = .364
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0043-----
* Area 500
 Unit Hyd Qpeak (cms) = .462
    PEAK FLOW (cms)= .050 (i)
TIME TO PEAK (hrs)= 3.067
RUNOFF VOLUME (mm)= 25.224
TOTAL RAINFALL (mm)= 69.300
RUNOFF COEFFICIENT = .364
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0044-----
* 25 year = 12hr AES
 | READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\25AES12.stm
| Ptotal= 81.30 mm | Comments: 25 year AES 12hr
001:0045-----
 CALIB MASHYD | Area (ha)= 1.46 Curve Number (CN)=76.50 01:100 DT=2.00 | Ia (mm)= 4.000 # of Linear Res.(N)=3.00 UR. Tp (hr)= 1.192
     Unit Hyd Qpeak (cms)= .290
     PEAK FLOW (cms) = .037 (i)
TIME TO PEAK (hrs) = 3.033
RUNOFF VOLUME (mm) = 38.469
TOTAL RAINFALL (mm) = 81.300
RUNOFF COEFFICIENT = .473
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0046-----
* Area 200
 | CALIB NASHYD | Area (ha) = 5.75 Curve Number (CN) = 76.50 | 02:200 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .262
     Unit Hyd Qpeak (cms) = .838
     PEAK FLOW (cms) = .143 (i)
TIME TO PEAK (hrs) = 3.067
RUNNOFF VOLUME (mm) = 38.469
TOTAL RAINFALL (mm) = 81.300
RUNOFF COEFFICIENT = .473
```

```
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0047-----
 * Area 300
  | CALIB NASHTD | Area (ha) = 1.89 Curve Number (CN) =82.00 | 03:300 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .139
          Unit Hyd Qpeak (cms) = .519
          PEAK FLOW (cms) = .057 (i)
TIME TO PEAK (hrs) = 3.000
RUNOFF VOLUME (mm) = 44.908
TOTAL RAINFALL (mm) = 81.300
           RUNOFF COEFFICIENT = .552
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0048-----
* Area 400
 | CALLEN NASHYD | Area (ha) = 14.13 Curve Number (CN) -71.00 | 04:400 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .450
           Unit Hyd Qpeak (cms) = 1.199
          PEAK FLOW (cms)= .282 (i)
TIME TO PEAK (hrs)= 3.233
RUNOFF VOLUME (mm)= 33.004
TOTAL RAINFALL (mm)= 81.300
RUNOFF COEFFICIENT = .406
           (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
0.01 - 0.04 9------
* Area 500
Unit Hyd Qpeak (cms) = .462
          PEAK FLOW (cms) = .066 (i)
TIME TO PEAK (hrs) = 3.067
RUNOFF VOLUME (mm) = 33.004
TOTAL RAINFALL (mm) = 81.300
RUNOFF COEFFICIENT = .406
            (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* 50 year - 12hr AES
| READ STORM | Filename: C:\SWMHYM~1\LAKEST~1\50AES12.stm
| Ptotal= 90.40 mm | Comments: 50 year AES 12hr
                                 TIME RAIN | TIME R
001:0051-----
 * Area 100
```

CALIB NASHYD | Area (ha) = 1.46 Curve Number (CN)=76.50 01:100 DT= 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = 192

Unit Hyd Qpeak (cms) = .290

```
PEAK FLOW (cms)= .044 (i)
TIME TO PEAK (hrs)= 3.033
RUNOFF VOLUME (mm)= 45.400
     TOTAL RAINFALL (mm) = 90.400
RUNOFF COEFFICIENT = .502
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0052-----
* Area 200
 | CALIB NASHTD | Area (ha) = 5.75 Curve Number (CN) = 76.50 | 02:200 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 | U.H. Tp(hrs) = .262
     Unit Hyd Qpeak (cms)= .838
    PEAK FLOW (cms) = .169 (i)
TIME TO PEAK (hrs) = 3.067
RUNOFF VOLUME (mm) = 45.400
TOTAL RAINFALL (mm) = 90.400
RUNOFF COEFFICIENT = .502
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0053-----
* Area 300
Unit Hyd Qpeak (cms)= .519
    PEAK FLOW (cms) = .066 (i)
TIME TO PEAK (hrs) = 3.000
RUNOFF VOLUME (mm) = 52.512
TOTAL RAINFALL (mm) = 90.400
RUNOFF COEFFICIENT = .581
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
0.01 - 0.0 54------
* Area 400
| CALIB NASHYD | Area (ha) = 14.13 Curve Number (CN) =71.00 | 04:400 DT = 2.00 | Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 | U.H. Tp(hrs) = .450
    Unit Hyd Qpeak (cms) = 1.199
    PEAK FLOW (cms)= .337 (1)
TIME TO PEAK (hrs)= 3.233
RUNOFF VOLUME (mm)= 39.259
TOTAL RAINFALL (mm)= 90.400
RUNOFF COEFFICIENT = .434
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
Unit Hyd Qpeak (cms) = .462
    PEAK FLOW (cms)= .078 (i)
TIME TO PEAK (hrs)= 3.067
RUNOFF VOLUME (mm)= 39.259
TOTAL RAINFALL (mm)= 90.400
RUNOFF COEFFICIENT = .434
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
* 100 year - 12hr AES
| READ STORM | Filename: C:\SWMHYM-1\LAKEST-1\100AES12.stm | Ptotal= 99.70 mm | Comments: 100 year AES 12hr
           001:0057-----
* Area 100
Unit Hyd Qpeak (cms) = .290
    PEAK FLOW (cms)= .051 (i)
TIME TO PEAK (hrs)= 3.033
RUNOFF VOLUME (mm)= 52.718
    TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = .529
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0058-----
* Area 200
Unit Hyd Qpeak (cms) = .838
   PEAK FLOW (cms) = 1.96 (i)
TIME TO PEAK (hrs) = 3.067
RUNOFF VOLUME (mm) = 52.718
TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = 5.29
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0059-----
* Area 300
 CALIB NASHYD | Area (ha)= 1.89 Curve Number (CN)=82.00 03:300 DT= 2.00 | Ia (mm)= 4.000 # of Linear Res.(N)= 3.00 UH. Tp(Rrs)= .139
    Unit Hyd Qpeak (cms)= .519
   PEAK FLOW (cms) = .076 (i)
TIME TO PEAK (hrs) = 3.000
RINNOFF VOLUME (mm) = 60.470
TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = .607
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0060-----
 Area 400
Unit Hyd Qpeak (cms) = 1.199
    PEAK FLOW (cms) = .395 (i)
TIME TO PEAK (hrs) = 3.233
RUNOFF VOLUME (mm) = 45.920
TOTAL RAINFALL (mm) = 99.700
RUNOFF COEFFICIENT = .461
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
* Area 500
  Unit Hyd Qpeak (cms) = .462
           PEAK FLOW (cms) - .092 (1)
TIME TO PEAK (hrs) - 3.067
RINOFF VOLUME (mm) - 45.919
TOTAL RAINFALL (mm) - 99.700
RUNOFF COEFFICIENT - .461
              (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0062-----
PROPOSED CONDITION
 * 25mm Quality Event
    | READ STORM | Filename: C:\SWMHYM-1\LAKEST~1\25MM.STM | Ptotal= 25.00 mm | Comments: 25 mm 4 hr
   TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
                                     TIME RAIN | TIME | T
 001:0063-----
 * Area 101
    | CALIB STANDHYD | Area (ha)= .28
| 01:101 | DT= 1.00 | Total Imp(%)= 50.00 | Dir. Conn.(%)= 35.00
                                                                                  IMPERVIOUS PERVIOUS (i)
            Surface Area (ha) =
Dep. Storage (mm) =
Average Slope (%) =
Length (m) =
Mannings n =
                                                                                                                             .14
2.50
2.90
35.00
.250
                                                                                           .14
                                                                                         2.90
42.00
.013
                                                                                        50.21 15.13
1.00 14.00
1.45 (ii) 13.86 (ii)
1.00 14.00
.85 .08
             Max.eff.Inten.(mm/hr)=
             over (min)
Storage Coeff. (min)=
Unit Hyd. Tpeak (min)=
Unit Hyd. peak (cms)=
               PEAK FLOW
              TIME TO PEAK (hrs) =
RUNOFF VOLUME (mm) =
TOTAL RAINFALL (mm) =
RUNOFF COEFFICIENT =
                                                                                        1.50
24.40
25.00
                                                                                                                                                                      1.500
                   (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
                CN* = 82.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
 * Area 201
```

Dep. Storage (m Average Slope (n) = n) = b) = n) =	1MPERVIOU .17 .60 2.80 20.00 .013	PERVIOUS .17 2.50 2.80 35.00 .250	(1)		
Max.eff.Inten.(mm/h over (mi		50.21	15.74 13.00			
Storage Coeff. (mi		.94		(ii)		
Unit Hyd. Tpeak (mi	n) =	1.00	13.00			
Unit Hyd. peak (cm	s) =	1.11	.09			
					TOTALS	
PEAK FLOW (cm	s) =	.02	.00		.018	(iii)
TIME TO PEAK (hr	s) =	1.50	1.68		1.500	
RUNOFF VOLUME (m	n) =	24.40	8.07		13.784	
TOTAL RAINFALL (m	n) =	25.00	25.00		24.996	
RUNOFF COEFFICIENT	-	.98	.32		.551	

- THAN THE STORAGE COEFFICIENT.

 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY

- Area	(ha)=	0.44			
	(ha)=	0.44			
	(ha)=				
			_		
- 10041	Imp(%)=	60.00 Di	r. Conn.	. (%)=	25.00
	TMPERVIOR	is provini	s (i)		
(%) -					
		35.00			
-					
n/hr) =	50.21	22.69			
(min)	7.00	15.00			
(min) =	6.71	(ii) 15.03	(ii)		
(cms) =	.17	.08			
				*TOTALS	
(cms) =	.22	.13			(iii)
	1.55	1.72			
NT -	.98	.34		.501	
	(ha) = (mm) = (%) = (%) = (m) = (min) = (min) = (min) = (cms) = (cms) = (frs) = (mm) =	(ha) = 5.06 (mm) = 6.00 (%) = 4.90 (ms) = 700.00 (ms) = 700.01 (msin) = 6.71 (msin) = 6.71 (msin) = 6.71 (msin) = 1.55 (msin) = 22 (msin) = 24.40 (msin) = 25.00 (msin) = 9.81 (msin) =	(ha) - 5.06 3.38 (mm) - 60 2.50 (%) - 4.90 6.40 (%) - 4.90 6.40 (%) - 0.13 2.5	(ha) = 5.06 3.38 (mm) = .60 2.50 (%) = 4.90 6.40 (m) = 70.00 35.00 = .013 .250 (min) 7.00 15.00 (min) = 6.71 (ii) 15.03 (ii) (min) = 7.00 (min) = 7.00 (min) = 7.00 (min) = 1.10 (min) = 1.	(ha) = 5.06 3.38 (mm) = 60 2.50 (%) = 4.90 6.40 (m) = 70.00 35.00 = 0.01

(111) PEAR FLOW DOES NOT IN	CLODE BASEL	OW IF ANI.
001:0066		
* Total Flows to Pond *		
* 24 hour draw down of 25 mm run *	off	
* 1058 m3 / 24 hr / 60 min per h *	r / 60 s per	min = 0.012 cms
COMPUTE VOLUME		
ID:03 (301)	DISCHARGE	TIME
	(cms)	(hrs)
START CONTROLLING AT	.000	.267
INFLOW HYD. PEAKS AT	.299	1.583
	.012	4.331

REQUIRED STORAGE VOLUME (ha.m.)= .0960 TOTAL HYDROGRAPH VOLUME (ha.m.) = .1058 % OF HYDROGRAPH TO STORE = 90.7307 NOTE: Storage was computed to reduce the Inflow peak to .012 (cms).

*** WARNING: Calculated volume may not be the maximum.

001:0067-----ROUTE RESERVOIR ROUTE RESERVUIR IN>03:(301) | OUT<04:(POND) | Requested routing time step = 1.0 min. OUTLFOW STORAGE TABLE
OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
.000 .0000E+00 | .059 .3300E+00

```
.007 .3000E-01
.009 .6000E-01
.011 .9000E-01
.026 .1200E+00
.033 .1500E+00
.039 .1800E+00
.043 .2100E+00
.046 .2400E+00
.052 .2700E+00
.055 .3000E+00
                                                                                            .062 .3600E+00
.065 .3900E+00
.068 .4200E+00
.070 .4500E+00
                                                                                           .073 .4800E+00
.075 .5100E+00
.077 .5400E+00
.529 .5700E+00
.000 .0000E+00
        ROUTING RESULTS
                                                        AREA
                                                                                          TPEAK
                                                      (ha)
8.44
8.44
                                                                    (cms)
.299
.013
.000
                                                                                          (hrs)
1.583
4.300
       INFLOW >03: (301 )
OUTFLOW<04: (POND )
OVERFLOW<**: (000001)
                                 TOTAL NUMBER OF SIMULATED OVERFLOWS =
                                 CUMULATIVE TIME OF OVERFLOWS (hours) = PERCENTAGE OF TIME OVERFLOWING (%) =

        PEAK
        FLOW
        REDUCTION [Qout/Qin] (%) = 4.452

        TIME SHIFT OF PEAK FLOW (min) = 163.00

        MAXIMUM STORAGE USED (ha.m.) = .9388E-01

001:0068-----
* Area 401
Unit Hyd Qpeak (cms)= 1.136
      PEAK FLOW (cms) = .072 (i)
TIME TO PEAK (hrs) = 2.133
RUNOFF VOLUME (mm) = 3.711
TOTAL RAINFALL (mm) = 24.996
RUNOFF COEFFICIENT = .148
        (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0069-----*
* Area 501
  CALIB STANDHYD | Area (ha)= 3.92
06:501 DT= 1.00 | Total Imp(%)= 65.00 Dir. Conn.(%)= 35.00
                                                 IMPERVIOUS PERVIOUS (i)
         Surface Area (ha)=
                                                   2.55
.60
4.90
500.00
                                                                                1.37
2.50
6.40
35.00
.250
        Dep. Storage (mm) =
Average Slope (%) =
Length (m) =
Mannings n =
                                                         .013
        Max.eff.Inten.(mm/hr)=
                                                         50.21
                                                                                23.12
        over (min)
Storage Coeff. (min)=
Unit Hyd. Tpeak (min)=
Unit Hyd. peak (cms)=
                                                          5.00 14.00
5.49 (ii) 13.74 (ii)
5.00 14.00
.21 .08
                                                                                                        *TOTALS*
.185 (iii)
1.533
14.075
        PEAK FLOW (cms) =
TIME TO PEAK (hrs) =
RUNOFF VOLUME (mm) =
TOTAL RAINFALL (mm) =
RUNOFF COEFFICIENT =
                                                        .16
1.52
24.40
25.00
                                                                             1.70
8.52
25.00
                                                                                                          24.996
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 76.5 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
(iii) PEAR FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Total Flows to Pond
* 24 hour draw down of 25 mm runoff
* 552 m3 / 24 hr / 60 min per hr / 60 s per min = 0.006 cms
| COMPUTE VOLUME |
| ID:06 (501 ) |
                                                         DISCHARGE
                                                            (cms)
.000
.185
                  START CONTROLLING AT
INFLOW HYD. PEAKS AT
STOP CONTROLLING AT
```

REQUIRED STORAGE VOLUME (ha.m.) = .0462
TOTAL HYDROGRAPH VOLUME (ha.m.) = .0552
% OF HYDROGRAPH TO STORE = 83.6759

NOTE: Storage was computed to reduce the Inflow peak to $$.012$\ (cms).$

*** WARNING: Calculated volume may not be the maximum.

ROUTE RESERVOI: IN>06:(501										
	R			routing						
OUT<07:(POND)			OUTLFOW	STOR	AGE T	ABLE		200	
		(0)	20W	STORAGE (ha.m.)		(c	mo)	(ha	m l	
			000 .	0000E+00	1		074 .	1200E	+00	
		- 1	004 .	1500E-01			074 .	1350E	+00	
			005 .	3000E-01	- !					
			136	3000E-01 4500E-01 6000E-01	1		N98 .	1800E	+00	
			048 .	7500E-01	i		325 .	1950E	+00	
		-!)58 .	7500E-01 9000E-01 1050E+00			325 735	2100E	+00	
ROUTING RES			AKE (ha	A QF) (c 2 .	ms)	(h	EAK rs)	- (.V.	
INFLOW >06:	(501)	3.9	2 .	185	1.	533	14.	075	
OUTFLOW<07: OVERFLOW<**:	(POND)		2 .	012	4.	117	14.	074	
OVERFLOW<**:	(000001	L)	.0	0 .	000		000		000	
	TOTAL	NUMB	ER OF	SIMULATE	D OVE	RFLOW	s =		0	
	CUMUI	LATIVE	TIME	OF OVERF	LOWS	(hou	rs)=		00	
	PERCI	NIMGE	OF TI	na OvaKř	TOMIN	G	(<)=		00	
	DE ST	PT C	a p=	DUCTION	[Oov:	/01 r 3	(%) -	6 1	E 1	
	TIME	SHIFT	OF PE	DUCTION AK FLOW	LYOUT	(m)	(2)= in)=	155	00	
	MAXIN	NUM S	FORAGE	USED		(ha.	m.)4	764E-	01	
001:0072										
*										
* 100 year event * CHICAGO STORM				aramatar	o · h=	971	130			
Ptotal= 48.81	mm				B=	1.	500			
		used :	in-	T.11000100T	U=					
				INTENSIT	Y =	A / (t + B)	^C		
		Durat:				A / (t + B)	^C		
		Durat: Storm	ion of	storm	- 1. - 2.	A / (00 hr	t + B)	^C		
		Time :	lon of time to pea	storm step k ratio	- 1. - 2. 	A / (00 hr 00 mi 33	t + B) s n			
	The	Time :	ion of time to pea	storm step k ratio coeffic	- 1. - 2. 	A / (00 hr 00 mi 33 is =	t + B) s n	162		
	The	CORRE:	ion of time to pea LATION	storm step k ratio coeffic	- 1. - 2. 	A / (00 hr 00 mi 33 is =	t + B) s n	162 'ED		
	The	CORRE	lon of time to pea LATION EN (m 2	storm step k ratio coeffic TERED m/hr) 68.10	- 1. - 2. 	A / (00 hr 00 mi 33 is =	t + B) s n .99968 COMPUT (mm/F) 249.	162 PED 1r)		
	The TIN (mir	CORRE	lon of time to pea LATION EN (m 2	storm step k ratio coeffic TERED m/hr) 68.10 65.10	- 1. - 2. 	A / (00 hr 00 mi 33 is =	s n .99968 COMPUT (mm/) 249. 164.	162 PED 1r) 52		
	The	CORRES	ion of time to pea LATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40	- 1. - 2. 	A / (00 hr 00 mi 33 is =	.99968 .00MPUT (mm/F 249. 164.	162 PED 1r) 52 90 88		
	The TIN (mir	CORRE	LATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10	- 1. - 2. 	A / (00 hr 00 mi 33 is =	s n .99968 COMPUT (mm/) 249. 164.	162 PED 11) 52 90 88 34		
	The TIN (mir 5 10 15 30 60 120	CORRES	ion of time to pea LATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10	- 1. - 2. 	A / (00 hr 00 mi 33 is =	.99968 COMPUT (mm/F 249. 126. 79. 48. 29.	ED 17) 52 90 88 34 82 78		
	The TIN (mir. 10 19 30 60 122 360	CORRES	ion of time to pea LATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50	- 1. - 2. 	A / (00 hr 00 mi 33 is =	.99968 .99968 .0MPUT (mm/1 249. 164. 126. 79. 48. 29.	ED 12) 52 90 88 34 82 78 49		
	The TIN (mir 5 10 15 30 60 120	CORRE:	LON of time to pea LATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10	- 1. - 2. 	A / (00 hr 00 mi 33 is =	.99968 .99968 .0MPU1 (mm/l 249. 164. 126. 79. 48. 29.	ED 17) 52 90 88 34 82 78		
THE	The TIN (mir 10 11 33 66 122 366 722 1440	CORRE:	ion of time to pea ATION EN (m 2 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 24.7.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	.99968 .99968 .0MPUT .249. .164. .126. .79. .48. .29. .13. .8.	FED 127) 52 90 88 34 82 78 49 17	TIME	RAIN
TII h	The TIN (mir 10 11 33 66 122 366 722 1440	CORRE:	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	TIME hrs	mm/hr
TII h	The TIN (min 19 10 66 122 366 72 1440 ME RAF rs mmm, 03 315.5.	CORRES 4E 1) 5. 6. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs	mm/hr 17.704
	The TIN (mir	CORRE: ME 1) 5. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs .83 .87	mm/hr 17.704 16.846
-	The TIN (mir 5 10 19 36 60 12 366 72 144 MME RR RR mm 03 15.5 07 17.10	CORRE: ME 1) 5. 1) 6. 1) 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs .83 .87	mm/hr 17.704 16.846
. l .: .:	The TIN (mir 10 11 30 60 722 1440 ME Ra Frs mm 03 15.9 07 17.1 10 19.0 13 21.9 17 25.7	Time (CORRE:	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs .83 .87 .90 .93	mm/hr 17.704 16.846 16.081 15.393 14.770
- - - - -	The TIN (mir 9 10 19 33 66 122 366 722 1440 ME RJ FS mm, 07 17.1 10 19.0 113 21.1 17 25.0 20 30.2	CORRE: (CORRE: (A) (CORRE: (A) (CORRE: (A) (CORRE: (A) (CORRE: (A) (CORRE: (CORE: (CORRE: (CORRE: (CORRE: (CORRE: (CORRE: (CORRE: (CORRE:	time to pea LATION EN (m 2 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs .83 .87 .90 .93	mm/hr 17.704 16.846
.1 	The TIN (mir) 10 11 30 66 122 144 44 MME RR RR RS MMP 17 17 17 17 17 17 17 17 17 17 25 17 20 30 12 3	CORRE: ME 1) 5. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	time to pea LATION EN (mm 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 76.60 47.20 29.10 13.50 8.30 5.10	= 1. = 2. = .	A / (00 hr 00 mi 33 is =	S 99968 .99968 COMPUT (mm/) 249. 164. 126. 79. 48. 29. 13. 8. 4. RAI mm/)	162 PED 152 90 88 34 82 78 49 17 94	hrs .83 .87 .90 .93	mm/hr 17.704 16.846 16.081 15.393 14.770
- - - - -	The TIN (mir (s) 10 11 30 66 72 1440 ME RA Frs mm 15 10 19 10 19 11 13 21 15 25 26 36 26 36 36 36 36 36 36 36	CORRE: ME 1) 5. 1) 6. 1) 6. 1) 6. 1) 6. 1) 6. 1) 6. 1) 6. 20 1) 6. 21 10 23 26 10 20 21 22 21 22 26 26 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28	ion of time co pea ATION (mm (mm 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	storm step k ratio coeffic TERED m/hr) 68.10 65.10 24.40 77.20 29.10 13.50 8.30 5.10 RAIN mm/hr 121.721 391.100 155.388 89.546 64.172 50.663 42.223 36.437	= 1.	TIME hrs .57 .60 .63 .67 .70 .73 .80	99966 .99966 .99966 .99966 .99966 .99966 .9948 .8829 .9948 .8846 .8946 .9948 .994	EED rr) 52 90 888 34 49 17 79 94 Nr	hrs .83 .87 .90 .93 .97	mm/hr 17.704 16.846 16.081 15.393 14.770

CA	LIB STANDHYD	Area	(ha) =	.28			
01	:101 DT= 1.00	Total	Imp (%) =	50.00 Dir	. Conn. (%) =	35.00
		-					
			IMPERVIOU		(i)		
	Surface Area		.14				
	Dep. Storage		.60				
	Average Slope						
	Length	(m) =	42.00				
	Mannings n	-	.013	.250			
	Max.eff.Inten.(m	m/hr)=	391.10	144.56			
		(min)	1.00				
	Storage Coeff.	(min) =	. 64	(ii) 5.67	(ii)		
	Unit Hyd. Tpeak	(min) =	1.00	6.00			
	Unit Hyd. peak	(cms) =	1.34	.20			
					*	TOTALS	
	PEAK FLOW	(cms) =	.10	.03		.112	(iii
	TIME TO PEAK	(hrs)=	.33	.43		.333	
	RUNOFF VOLUME	(mm) =	48.21	24.48		32.787	
	TOTAL RAINFALL	(mm) =	48.81	48.81		48.806	
	RUNOFF COEFFICIE	INT -	.99	.50		.672	

- (i) CM PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* 82.0 IA Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SHALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAR FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	01:0074								
*	Area 201								
- 1	CALIB STANDHYD	Area	(ha)=	. 32					
- 1	02:201 DT= 1.00	Tota	1 Imp(%)=	50.00	Dia	r. Conn	. (%) =	35.00	
			IMPERVIOU	JS PE	RVIOUS	S (i)			
	Surface Area	(ha) =	.16		.16				
	Dep. Storage								
	Average Slope	(%) =	2.80		2.80				
	Length	(m) =	20.00		35.00				
	Mannings n	-	.013		.250				
	Max.eff.Inten.(mm/hr)=	391.10	1	58.24				
	over	(min)	1.00		5.00				
	Storage Coeff.	(min) =	.41	(ii)	5.32	(ii)			
	Unit Hyd. Tpeak	(min) =	1.00		5.00				
	Unit Hyd. peak	(cms) =	1.55		.22				
							*TOTALS	*	
	PEAK FLOW								
	TIME TO PEAK	(hrs)=	.33		. 42		.333		
	RUNOFF VOLUME								
	TOTAL RAINFALL	(mm) =	48.81		48.81		48.806	i	
	RUNOFF COEFFICI	ENT -	.99		.50		.672		

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 82.0 Ia = Dep. Storage (Above)

 (ii) THME STEP (DT) SHOULD BE SMALLER OR EQUAL

 THAN THE STORAGE COEFFICIENT.

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

001:0075-----

* Area 301

CAI	LIB STANDHYD	Area	(ha)=	8.44				
03:	:301 DT= 1.00	Total	Imp (%) =	60.00	Dir	. Conn.	(%) = 2	5.00
			IMPERVIOU	IS PER	RVIOUS	(i)		
	Surface Area	(ha) =	5.06		3.38			
	Dep. Storage	(mm) =	.60		2.50			
	Average Slope	(%) -	4.90		6.40			
	Length	(m) =						
	Mannings n	-	.013		.250			
	-							
	Max.eff.Inten.(r	nm/hr)=	312.52	19	96.42			
	over	(min)	3.00		7.00			
	Storage Coeff.	(min) =	3.23	(ii)	6.74	(ii)		
	Unit Hyd. Tpeak	(min) =	3.00		7.00			
	Unit Hyd. peak	(cms) =	.36		.17			
							TOTALS	
	PEAK FLOW	(cms) =	1.22		1.13		1.895	(iii)
	TIME TO PEAK	(hrs) =	.37		.45		.417	
	RUNOFF VOLUME	(mm) -	48.21	- 1	25.30		31.025	
	TOTAL RAINFALL	(mm) =	48.81	4	18.81		48.806	
	RUNOFF COEFFICIE	ENT -	.99		.52		.636	

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 76.5 Ia = Dep. Storage (Above)

 (ii) THMS STEP (CT) SHOULD BE SMALLER OR EQUAL

 THAN THE STORAGE COEFFICIENT.

 (iii) PEAR FLOW DOES NOT INCLIDE BASEFLOW IF ANY.

01:0076	
COMPUTE VOLUME	
I TD-02 (201) I DISCURDED TIME	
(cms) (hrs)	
START CONTROLLING AT .000 .033	
INFLOW HYD. PEAKS AT 1.895 .417	
STOP CONTROLLING AT .220 1.077	
REQUIRED STORAGE VOLUME (ha.m.) = .2119 TOTAL HYDROGRAPH VOLUME (ha.m.) = .2619 % OF HYDROGRAPH TO STORE = 80.9357	
TOTAL HYDROGRAPH VOLUME (na.m.)= .2619	
OF HIDROGRAPH TO STORE = 80.9357	
NOTE: Storage was computed to reduce the Inflow	
peak to .220 (cms).	
•	
*** WARNING: Calculated volume may not be the maximum.	
001:0077	
*	
* Area 401	
CALIB NASHYD Area (ha)= 13.38 Curve Number (CN) 05:401 DT= 2.00 Ia (mm)= 4.000 # of Linear Res.(N)	- 72 20
05:401 DT= 2.00 Ia (mm)= 4.000 # of Linear Res.(N)	= 3 00
	- 5.00
v.n. 1p(1120)400	
Unit Hyd Qpeak (cms) = 1.136	
PEAK FLOW (cms) = .509 (i) TIME TO PEAK (hrs) = .967 RUNOFF VOLUME (mm) = 14.078 TOTAL RAINFALL (mm) = 48.806 RUNOFF COEFFICIANT = .288	
TIME TO PEAK (hrs)= .967	
RUNOFF VOLUME (mm) = 14.078	
TOTAL RAINFALL (mm) = 48.806	
RUNOFF COEFFICIENT = .288	
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
(1) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
001:0078	
*	
* Area 501	
*	
CALIB STANDHYD Area (ha)= 3.92	
06:501 DT= 1.00 Total Imp(%) = 65.00 Dir. Conn.(%) = 35	.00
CALIB STANDHYD Area (ha)= 3.92 06:501 DT= 1.00 Total Imp(%)= 65.00 Dir. Conn.(%)= 35	.00
06:501 DT= 1.00 Total Imp(%) = 65.00 Dir. Conn. (%) = 35	.00
06:501 DT= 1.00 Total Imp(%)= 65.00 Dir. Conn. (%)= 35	.00
06:501 DT-1.00 Total Imp(%)- 65.00 Dir. Conn.(%)- 35	.00
06:501 DT-1.00 Total Imp(%) - 65.00 Dir. Conn.(%) - 35 IMPERVIOUS PERVIOUS (i) Surface Area (ha) - 2.55 1.37 Dep. Storage (mm)60 2.50 Average Slope (%) - 4.90 6.40	.00
06:501 DT-1.00 Total Imp(%)- 65.00 Dir. Conn.(%)- 35 DEFINITION TOTAL Imp(%)- 65.00 Dir. Conn.(%)- 35 SUrface Area (ha)- 2.55	.00
06:501 DT-1.00 Total Imp(%) - 65.00 Dir. Conn.(%) - 35 Surface Area (ha) - 2.55 1.37 Dep. Storage (mm)60 2.50 2.50 Average Slope (%) - 4.90 6.40 Length (m) - 500.00 35.00 Mannings n013 .250	.00
IMPERVIOUS PERVIOUS (1)	.00
Surface Area (ha) = LOST SERVICUS (1)	
Surface Area (ha) = LOST SERVICUS (1)	
Surface Area (ha) = LOST SERVICUS (1)	
Surface Area (ha) = LOST SERVICUS (1)	
Surface Area (ha) = IMPERVIOUS PERVIOUS (1)	
Surface Area (ha) = LOST SERVICUS (1)	
Surface Area (ha) = VERVIOUS (1) Surface Area (ha) = 2.55	
Surface Area (he) = IMPERVIOUS PERVIOUS (1)	
Surface Area (he) = IMPERVIOUS PERVIOUS (1)	
Surface Area (ha) = DERVIOUS (1)	
Surface Area (he) = IMPERVIOUS PERVIOUS (1)	
Surface Area (ha) = EMPROVIOUS PERVIOUS (1) Surface Area (ha) = .60 2.50 Dep. Storage (mm) = .60 2.50 Average Slope (h) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings n = .013 .250 Max.eff.Inten.(nm/hr) = 312.52 212.32 over (min) 3.00 6.00 Storage Coeff. (min) = 2.64 (ii) 6.04 (ii) Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.04 1.19 FEAN FLOW (cms) = .86 .48 1.141 (The TO PEAK (hrs) = .37 .43 3.67 RUNOFF OULDME (mm) = 48.21 25.17 33.266 TOTAL FAINFALL (mm) = 48.81 48.81 48.80 6 RUNOFF COEFFICIENT = .99 0.52 681 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CM = 76.5 1 a - Dep. Servage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.	
Surface Area (ha) = 2.55	iii)
Surface Area (ha) = UMPERVIOUS PERVIOUS (1) Surface Area (ha) = .60 2.50 Dep. Storage (mm) = .60 2.50 Average Slope (h) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings n = .013 .250 Max.eff.Inten.(mm/hr) = 312.52 212.32 over (min) 3.00 6.00 Storage Coeff. (min) = 2.64 (ii) 6.04 (ii) Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.45 41 .19 PEAK FLOW (cma) = .86 .48 1.141 TIME TO PEAK (hrs) = .37 .43 31.47 RUNOFF VOLUME (mm) = 48.21 25.17 33.26 TOTAL RAINFALL (mm) = 48.21 25.17 33.26 TOTAL RAINFALL (mm) = 48.21 25.17 33.26 TOTAL FAINFALL (mm) = 48.21 25.17 33.26 TOTAL FAINFALL (mm) = 48.21 25.17 33.26 TOTAL FAINFALL (mm) = 68.21 25.17 33.26 TOTAL RAINFALL (mm) = 68.21 25.26 TOTAL RAINFALL (mm) = 68.2	iii)
Surface Area (ha) = 2.55	iii)
Surface Area (ha) =	iii)
IMPERVIOUS PERVIOUS (1)	iii)
IMPERVIOUS PERVIOUS (1)	iii)
Surface Area (ha) = 2.58 PERVIOUS (1)	iii)
Surface Area (ha) = 2.58 PERVIOUS (1)	iii)
Surface Area (ha) = 2.55 11.37 Dep. Storage (mm) = .60 2.50 Average Slope (h) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings = .013 .250 Max.eff.Inten.(sum/hr) = 312.52 212.32 Over (min) 3.00 6.00 Storage Coeff. (min) = 2.64 (ii) 6.04 (ii) Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.04 1.11 PEAK FLOW (cms) = .41 .19 FEAK FLOW (cms) = .86 .48 1.141 (TIME TO FEAK (hrs) = .37 .43 .367 (RUMOFF VOLUME (mm) = 48.21 25.17 33.236 (RUMOFF VOLUME (mm) = 48.21 25.17 33.236 (RUMOFF COEFFICIENT99 .52 .681 ((i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN = 76.5 Ia - Dep. Storage (Above) ((ii) TIME STEP (DT) SHOULDE BE SARLIER OR EQUAL THAN THE STORAGE COEFFICIENT. ((iii) FEAK FLOW DOES NOT INCLUDE ARSFELOW IF ANY.	iii)
Surface Area (ha) = 2.58 PERVIOUS (1)	iii)
Surface Area (ha) = V2ERVIOUS (2) Surface Area (ha) = V2ERVIOUS (2) Dep. Storage (mm) = .60 2.50 Average Slope (%) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings = .013 .250 Max.eff.Inten.(sum/hr) = 312.52 212.32 Over (min) 3.00 6.00 Storage Coeff. (min) = 2.64 (ii) 6.04 (ii) Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.01 6.00 Unit Hyd. Typeak (min) = .86 .48 1.141 (19) FEAK FLOW (cms) = .86 .48 1.141 (19) FEAK FLOW (min) = .86 .48 1.141 (19) FINGET OFEAK (min) = 48.21 28.17 33.236 (19) EUROFF VOLUME (min) = 48.21 28.17 33.236 (19) EUROFF COEFFICIENT = .99 .52 .681 (1) CN PROCEDURE SELECTED FOR FERVIOUS LOSSES: CN = 76.5 Ia - Dep. Storage (Above) (1i) TIME STEP (DT) FINOUID ER SARLIER OR EQUAL THAN THE STORAGE COEFFICIENT. (1i) FRAN FLOW DOES NOT INCLUDE AREFELOW IF ANY. 001:0079- """ OO1:0079- """ START CONTROLLING AT .000 .033 INFLOW MYD. FEAKS AT 1.141 .367 STOPP CONTROLLING AT .162 .963	iii)
Surface Area (ha) = 2.55	iii)
Surface Area (ha) = 2.55	iii)
Surface Area (ha) = V2ERVIOUS (2) Surface Area (ha) = V2ERVIOUS (2) Dep. Storage (mm) = .60 2.50 Average Slope (%) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings = .013 .250 Max.eff.Inten.(sum/hr) = 312.52 212.32 Over (min) 3.00 6.00 Storage Coeff. (min) = 2.64 (ii) 6.04 (ii) Unit Hyd. Tpeak (min) = 3.00 6.00 Unit Hyd. Tpeak (min) = 3.01 6.00 Unit Hyd. Typeak (min) = .86 .48 1.141 (19) FEAK FLOW (cms) = .86 .48 1.141 (19) FEAK FLOW (min) = .86 .48 1.141 (19) FINGET OFEAK (min) = 48.21 28.17 33.236 (19) EUROFF VOLUME (min) = 48.21 28.17 33.236 (19) EUROFF COEFFICIENT = .99 .52 .681 (1) CN PROCEDURE SELECTED FOR FERVIOUS LOSSES: CN = 76.5 Ia - Dep. Storage (Above) (1i) TIME STEP (DT) FINOUID ER SARLIER OR EQUAL THAN THE STORAGE COEFFICIENT. (1i) FRAN FLOW DOES NOT INCLUDE AREFELOW IF ANY. 001:0079- """ OO1:0079- """ START CONTROLLING AT .000 .033 INFLOW MYD. FEAKS AT 1.141 .367 STOPP CONTROLLING AT .162 .963	iii)
Surface Area (ha) = 1.255	iii)
Surface Area (ha) = 2.55	iii)

*** WARNING: Calculated volume may not be the maximum.

```
* 100 year event - 4 hr Chicago
                                                                                      IDF curve parameters: A= 971.139
B= 1.500
C= .726
used in: INTENSITY = A / (t + B) ^C
                                                                                       Duration of storm = 4.00 hrs
Storm time step = 2.00 min
Time to peak ratio = .33
                                                                           The CORRELATION coefficient is = .9996862
                                                                                                                            ENTERED
                                                                                                                                                                                                          COMPUTED
                                                                                                                                (mm/hr)
268.10
                                                                                                                                                                                                               (mm/hr)
249.52
164.90
                                                                           10.
15.
30.
60.
120.
360.
720.
                                                                                                                                 124.40
                                                                                                                                                                                                             126.88
79.34
                                                                                                                                    47.20
                                                                                                                                                                                                                   48.82
                                                                                                                                  29.10
13.50
8.30
5.10
                                                                                                                                                                                                                    29.78
13.49
8.17
4.94
                                              TIME RAIN | TIME R
                                                                                RAIN |
                                                                                                                  TIME RAIN | TIME
                                                                                                                                                                                                              RAIN |
001:0081-----
                                   TANDHYD | Area (ha)= .28

DT=1.00 | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00
   CALIB STANDHYD
                                                                                                                                                                      PERVIOUS (i)
                                                                                                                                                                          .14
2.50
                                                                        (mm) -
                  Dep. Storage
                Average Slope
Length
Mannings n
                                                                                    (%) =
(m) =
                                                                                                                                                                                 2.90
                                                                                                                           42.00
                                                                                                                                                                            35.00
                                                                                                                         391.10
1.00
                  Max.eff.Inten.(mm/hr)=
                  over (min)
Storage Coeff. (min)=
                                                                                                                                    1.00 5.00
.64 (ii) 5.14 (ii)
                   Unit Hvd. Tpeak (min) =
                  Unit Hyd. peak (cms)=
                                                                                                                                 1.34
                                                                                                                                                                                                                                  *TOTALS*
.122 (iii)
1.333
                 PEAK FLOW (cms) =
TIME TO PEAK (hrs) =
RUNOFF VOLUME (mm) =
                                                                                                                                                                         .05
1.40
43.76
                                                                                                                                                                                                                                    53.549
```

TOTAL RAINFALL (mm) = 72.33 RUNOFF COEFFICIENT = .99

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 001:0082-----* Area 201 CALIB STANDHYD | Area (ha)= .32
02:201 DT-1.00 | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) =
Dep. Storage (mm) =
Average Slope (%) = .16 .60 2.80 20.00 .013 .16 2.50 2.80 35.00 .250 Length (m) = Mannings n = 391.10 1.00 .41 (ii) 1.00 1.55 190.86 5.00 4.96 (ii) 5.00 .23 Max.eff.Inten.(mm/hr)= Max.eff.Inten. (mm/hr) = over (min)
Storage Coeff. (min) = Unit Hyd. Tpeak (min) = Unit Hyd. peak (cms) = *TOTALS* PEAK FLOW (cms)= .12 .05 .143 (iii) 1.333 53.549 72.334 PEAK FLOW (cms) =
TIME TO PEAK (hrs) =
RUNOFF VOLUME (mm) =
TOTAL RAINFALL (mm) =
RUNOFF COEFFICIENT = 1.33 71.73 72.33 .99 1.40 43.76 72.33 .60 .740 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: (1) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 I a - Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 001:0083-----| CALIB STANDHYD | Area (ha)= 8.44 | 03:301 DT= 1.00 | Total Imp(%)= 60.00 Dir. Conn.(%)= 25.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) = Dep. Storage (mm) = Average Slope (%) = (%) = (m) = 4.90 6.40 Length (m) = Mannings n = 35.00 .013 Max.eff.Inten.(mm/hr) = over (min)
Storage Coeff. (min) = 312.52 255.40 6.00 6.39 (ii) 3.00 3.23 (ii) Unit Hyd. Tpeak (min) = Unit Hyd. peak (cms) = 3.00 .18 *TOTALS* PEAK FLOW (cms) = TIME TO PEAK (hrs) = RUNOFF VOLUME (mm) = TOTAL RAINFALL (mm) = 1.23 1.37 71.73 72.33 1.48 1.42 44.76 72.33 2.379 (iii) 1.400 51.507 TOTAL RAINFALL (mm) = RUNOFF COEFFICIENT = 72.334 .99 THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 001:0084-----

| COMPUTE VOLUME | | ID:03 (301) | DISCHARGE START CONTROLLING AT .000
INFLOW HYD. PEAKS AT 2.379
STOP CONTROLLING AT .289 REQUIRED STORAGE VOLUME (ha.m.)= .2173 TOTAL HYDROGRAPH VOLUME (ha.m.) = .4347 % OF HYDROGRAPH TO STORE = 49.9784

NOTE: Storage was computed to reduce the Inflow peak to .289 (cms).

```
*** WARNING: Calculated volume may not be the maximum.
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001:0085
* Area 401
CALIB NASHYD Area (ha) = 13.38 Curve Number (CN) =72.20 05:401 DT= 2.00 Ia (mm) = 4.000 # of Linear Res.(N) = 3.00 U.H. Tp(hrs) = .450
Unit Hyd Qpeak (cms)= 1.136
PEAK FLOW (cms)667 (1) TIME TO PEAK (hrs) - 1.933 RUMOFF VOLUMS (cms) - 28.107 TOTAL BAINFALL (cms) - 72.234 RUMOFF COEFFICIANT389
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0086
* Area 501 *
CALIE STANDHYD
IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.55 1.37
Surface Area (ha) - 2.55 1.37 Dep. Storage (mm)60 2.55 Average Slope (h) - 4.50 6.40 Length (m) - 500.00 35.40 Mamilings013 .250
Length (m) = 500.00 35.00 Mannings n = 013 250
Mannings n = .013 .250
over (min) 3.00 6.00 Storage Coeff (min)= 2.64 (ii) 5.82 (ii)
Max.eff.infen.(mm/nr) = 342.52
PEAK FLOW (cms)= .86 .62 1.265 (iii) TIME TO PEAK (hrs)= 1.37 1.42 1.367
RUNOFF VOLUME (mm) = 71.73 44.59 54.093
TOTAL RAINFALL (mm) = 72.33 72.33 72.34 RUNOFF COEFFICIENT = .99 .62 .748
CN* = 76.5 Ia Dep. Storage (Above) (ii) THME STEP (DT) SHOULD BE SHALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOSS NOT INCLUDE BASSELOW IF ANY.
001:0087
001:0087
001:0087
001:0087
COMPUTE VOLUME
001:0087
COMPUTE VOLUME
COMPUTE VOLUME DISCHARGE TIME COMPUTE VOLUME DISCHARGE TIME ID:06 (501) DISCHARGE TIME ID:06 (501) DISCHARGE TIME START CONTROLLING AT .000 .100 INFLOW WITD. PERKS AT 1.265 1.367 STOP CONTROLLING AT .217 1.823 PEQUIRED STORAGE VOLUME (ha.m.) = .0829 TOTAL HYDROGRAPH VOLUME (ha.m.) = .2120 & OF HYDROGRAPH TO STORE = .39.1157 NOTE: Storage was computed to reduce the Inflow
COMPUTE VOLUME
O::0087
O01:0087
O01:0087
COMPUTE VOLUME

2.00 7.686 | 4.00 10.113 | 6.00 3.236 |

001:0 * *					
*					
*	1089				
*					
	ea 101				
_					
		-			Conn.(%)= 35.00
CAL	101 DT= 1.00	Area	(na) = Tmn(%) = 50	.28 0.00 Dir.	Conn. (%) = 35.00
	C	()1-	IMPERVIOUS	PERVIOUS ((1)
	Dep. Storage	(mm) =	.60	2.50	
	Average Slope	(₺) =	2.90	2.90	
	Length Mannings n	(m) =	42.00	35.00	
	Surface Area Dep. Storage Average Slope Length Mannings n		.013	.230	
	Max.eff.Inten.(r over Storage Coeff. Unit Hyd. Tpeak	am/hr)=	50.56	53.79	
	Storage Coeff	(min) =	1.00	9.00	11)
	Unit Hyd. Tpeak	(min) =	1.00	9.00	
	Unit Hyd. peak	(cms)=	.85	.13	
	PEAK FLOW	(cms)=	.01	.02	*TOTALS* .034 (iii)
	TIME TO PEAK	(hrs)=	2.78	3.00	3.000
	RUNOFF VOLUME	(mm) =	80.30	51.18	61.373 80.900
	PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIE	(mm) = ENT =	.99	80.90	.759
	(i) CN PROCEDU	JRE SELECT	ED FOR PERVIO	OUS LOSSES:	
	CN* = 82 (ii) TIME STEP	(DT) SHOU	LD BE SMALLER	R OR EQUAL	
	THAN THE S	STORAGE CO	EFFICIENT.		
	(iii) PEAK FLOW	DOES NOT	INCLUDE BASEF	FLOW IF ANY.	•
0.01 - 0					
*	,0 30				
* Are	ea 201				
*					
L CAI	TD CTANDUVD		(ha) =	22	
02:	201 DT= 1.00	Total	(na) = 50 . Imp(%) = 50	0.00 Dir.	Conn.(%)= 35.00
	Surface Avec	(ha) =	IMPERVIOUS	PERVIOUS .16 2.50 2.80	(1)
	Den. Storage	(mm) =	.60	2.50	
	Surface Area Dep. Storage Average Slope Length	(%) =	2.80	2.80	
	Length	(m) =			
	Mannings n	-	.013	.250	
	Max.eff.Inten.(r over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	nm/hr)=	50.56	53.89	
	over	(min)	1.00	8.00	
	Storage Coeff.	(min) =	.94 (ii)	8.48 (1	ii)
	Unit Hyd. rpeak	(min) = (cms) =	1.11	.14	
		(cms) =	.02	.02	
	PEAK FLOW				.033 (111)
	PEAK FLOW TIME TO PEAK	(hrs)=	2.78	3.00	.039 (iii) 3.000
	PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	(hrs) = (mm) =	2.78 80.30 80.90	3.00 51.18 80.90	61.373
	PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIE	(hrs) = (mm) = (mm) = :NT =	2.78 80.30 80.90 .99	3.00 51.18 80.90 .63	3.000 61.373 80.900 .759
	NONOII CODITICII		.,,	.00	61.373 80.900
	(i) CN PROCEDU	JRE SELECT	ED FOR PERVIO	OUS LOSSES:	61.373 80.900
	(i) CN PROCEDU CN* = 82 (ii) TIME STEP	JRE SELECT .0 Ia =	ED FOR PERVIO	OUS LOSSES:	61.373 80.900
	(i) CN PROCEDU CN* = 82. (ii) TIME STEP THAN THE S	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO	ED FOR PERVIO Dep. Storage DED BE SMALLER DEFFICIENT.	OUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
	(i) CN PROCEDU CN* = 82 (ii) TIME STEP	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO	ED FOR PERVIO Dep. Storage DED BE SMALLER DEFFICIENT.	OUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
	(i) CN PROCEDU CN* = 82 (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	CED FOR PERVIO Dep. Storage DEPENDED SMALLER DEFFICIENT. INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
	(i) CN PROCED CN* = 82. (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	PED FOR PERVICE DEP. Storage ILD BE SMALLER DEFFICIENT. INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL FLOW IF ANY.	61.373 80.900 .759
 001:0	(i) CN PROCED CN* = 82. (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	PED FOR PERVICE DEP. Storage ILD BE SMALLER DEFFICIENT. INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL FLOW IF ANY.	61.373 80.900 .759
001:0 * * Are	(i) CN PROCED CN* = 82. (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER DEFFICIENT INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
 001:0 * * Are	(i) CN PROCED CN* = 82. (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER DEFFICIENT INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
 001:0 * * Are	(i) CN PROCED CN* = 82. (ii) TIME STEP THAN THE S (iii) PEAK FLOW	JRE SELECT .0 Ia = (DT) SHOU STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER DEFFICIENT INCLUDE BASER	DUS LOSSES: e (Above) R OR EQUAL	61.373 80.900 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.900 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDI CN* = 82. (ii) TIME STEP THAN THE S: (iii) PEAK FLOW 20301 LIB STANDHYD 3301 DT= 1.00	JRE SELECT O IA = OTIN SHOULD STORAGE CO DOES NOT	TED FOR PERVICE Dep. Storage LID BE SMALLER EFFICIENT. INCLUDE BASEF (ha) = 8 Imp(%) = 60	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY.	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDE (ii) TIME STEP THAN THE: (iii) PEAR FLOW 10091 2a 301 JES STANDHYD 301 DT 1.00 Surface Area Dep. Storage Average Slope Length Mannings n	JRE SELECTI O Ia = (DT) SHOU TSTORAGE CC DOES NOT Area Total (ha) = (mm) = (%) =	TED FOR PERVIGENCE OF THE PERVIGENCE OF THE PERVICE	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY. PERVIOUS (3.44 0.00 Dir. PERVIOUS (3.38 2.50 6.40 35.00 .250	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDE (ii) TIME STEP THAN THE: (iii) PEAR FLOW 10091 2a 301 JES STANDHYD 301 DT 1.00 Surface Area Dep. Storage Average Slope Length Mannings n	JRE SELECTI O Ia = (DT) SHOU TSTORAGE CC DOES NOT Area Total (ha) = (mm) = (%) =	TED FOR PERVIGENCE OF THE PERVIGENCE OF THE PERVICE	JUS LOSSES: (Above) R OR EQUAL FLOW IF ANY. 3.44 3.00 Dir. PERVIOUS (3.38 2.50 6.40 35.00 .250 77.92	61.373 80.300 .759
001:0 * * Are * CAI	(i) CN PROCEDE (ii) TIME STEP THAN THE: (iii) PEAR FLOW 10091 2a 301 JES STANDHYD 301 DT 1.00 Surface Area Dep. Storage Average Slope Length Max.eff.Inten.(r	JRE SELECTION IA = (DT) SHOUTSTORAGE CC DOES NOT	(ha) = E (ha	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY. 3.44 0.00 Dir. PERVIOUS (3.38 2.50 6.40 77.92	61.373 80.300 .759
001:0 * * Are* * CAI	(i) CN PROCEDE (ii) TIME STEP THAN THE: (iii) PRAK FLOW 1091 a 301 LIB STANDHYD 301 DT-1.00 Surface Area Dep. Storage Length Namings N Max.eff.Inten. (gver	JRE SELECTI O IA = (DT) SHOUTTORAGE CC DOES NOT Area Total (ha) = (mm) = (k) = (m) = (min) = (mi	(ha) = E (ha	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY. 3.44 0.00 Dir. PERVIOUS (3.38 2.50 6.40 77.92	61.373 80.300 .759
001:0 * * Are* * CAI	(i) CN PROCEDE (ii) TIME STEP THAN THE: (iii) PRAK FLOW 1091 a 301 LIB STANDHYD 301 DT-1.00 Surface Area Dep. Storage Length Namings N Max.eff.Inten. (gver	JRE SELECTI O IA = (DT) SHOUTTORAGE CC DOES NOT Area Total (ha) = (mm) = (k) = (m) = (min) = (mi	TED FOR PERVICE TO BE STORAGE TO B	DUS LOSSES: 2 (Above) 2 OR EQUAL PLOW IF ANY. 3.44 0.00 Dir. PERVIOUS: 4.30 2.50 6.40 2.20 77.92 12.00 11.77 (12.00	61.373 80.300 .759
001:0 * * Are * - CAN	(i) CN PROCEDE (ii) TIME STEP THIAN THE: (iii) PEAR FLOW 1091 128 STANDHYD 301 DT-1.00 Surface Area Dep. Storage Average Slope Length Max.eff.Inten.(Storage Coeffe Unit Hyd. peak Unit Hyd. peak	JRE SELECTI O IA = (DT) SHOUTTORAGE CC DOES NOT Area Total (ha) = (mm) = (k) = (m) = (min) = (mi	(ha) = E (ha	DUS LOSSES: (Above) R OR EQUAL FLOW IF ANY. 3.44 0.00 Dir. PERVIOUS (3.38 2.50 6.40 77.92	61.373 80.300 .759

TIME					
	TO PEAK	(hrs)=	3.00 80.30 80.90	3.02	3.000
RUNOF	TO PEAK F VOLUME RAINFALL	(mm) =	3.00 80.30 80.90	52.24 80.90	59.257 80.900
RUNOF	F COEFFICI	ENT =	.99	.65	.732
(1)	CM DROCEDI	ine cerec	TED FOR PERVI	OHE LOSSES.	
(1)	CN* = 76.	.5 Ia	= Dep. Storag	e (Above)	
(ii)	TIME STEP	(DT) SHO	ULD BE SMALLE	R OR EQUAL	
(iii)	THAN THE S	STORAGE C DOES NOT	OEFFICIENT. INCLUDE BASE	FLOW IF ANY.	
001.0002					
*					
COMPUTE ID:03 (VOLUME 301)		DISCHARGE	TIME	
ID:03 (201)		(cms)	(hrs)	
	START CON	FROLLING .	DISCHARGE (cms) AT .000 AT .977	.100	
	INFLOW HY	FROLLING .	AT .977 AT .191	3.000 4.114	
	DECUITORD (PEODACE II	OTTIME (bs w)	- 2046	
	TOTAL HYDE	ROGRAPH V DGRAPH TO	OLUME (ha.m.) OLUME (ha.m.) STORE	= .2946 = .5001 = 58.9072	
				reduce the In	flow
	pea	ak to	.191 (cms).		
***				ot be the max	imum.
*					
* Area 401					
CALIB NA	SHYD	Area	(ha) = 1	3.38 Curve 1	Number (CN)=72.20 inear Res.(N)= 3.00
1 03.401		U.H.	Tp(hrs)=	.450	ineal Res.(N) = 3.00
		(cms) =	1.136		
PEAK	FLOW TO PEAK F VOLUME RAINFALL	(cms) =	.761 (i) 3.200 33.850		
RUNOF	TO PEAK F VOLUME	(nrs)= (mm)=	33.850		
TOTAL	RAINFALL	(mm) =	80.900		
RUNOF	F COEFFICIE	ENT -	.418		
(i) F					
	EAK FLOW DO	DES NOT I	NCLUDE BASEFL	OW IF ANY.	
001:0094					
001:0094 * * Area 501					
001:0094 * * Area 501		Area			
001:0094 * Area 501 * CALIB ST 06:501	ANDHYD DT= 1.00	Area	(ha) = 1 Imp(%) = 6	3.92 5.00 Dir. Co	onn. (%)= 35.00
001:0094 * Area 501 * CALIB ST 06:501	ANDHYD DT= 1.00	Area	(ha) = 1 Imp(%) = 6	3.92 5.00 Dir. C PERVIOUS (i	onn. (%)= 35.00
001:0094 * Area 501 * CALIB ST 06:501	ANDHYD DT= 1.00	Area	(ha) = 1 Imp(%) = 6	3.92 5.00 Dir. Co PERVIOUS (i 1.37 2.50	onn. (%)= 35.00
001:0094 * Area 501	CE Area Storage gg Slope	Area	(ha) = 1 Imp(%) = 6	3.92 5.00 Dir. C PERVIOUS (i 1.37 2.50 6.40 35.00	onn. (%)= 35.00
001:0094 * Area 501	ANDHYD DT= 1.00 ce Area Storage ge Slope	Area	(ha) = 1 Imp(%) = 6	3.92 5.00 Dir. Co PERVIOUS (i 1.37 2.50 6.40	onn. (%)= 35.00
001:0094 * Area 501	ANDHYD DT= 1.00 ce Area Storage ge Slope h ngs n ff.Inten.(r	(ha) = (mm) = (%) = (m) =	(ha)= 1 Imp(%)= 6 IMPERVIOUS 2.55 .60 4.90 500.00 .013	3.92 5.00 Dir. Cr PERVIOUS (1 1.37 2.50 6.40 35.00 .250	onn. (%)= 35.00
001:0094 * Area 501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e	ANDHYD DT= 1.00 ce Area Storage ge Slope h ngs n ff.Inten.(r	(ha) = (mm) = (%) = (m) =	(ha)= 1 Imp(%)= 6 IMPERVIOUS 2.55 .60 4.90 500.00 .013	3.92 5.00 Dir. Cr PERVIOUS (1 1.37 2.50 6.40 35.00 .250	onn.(%)= 35.00
001:0094 * Area 501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e	ANDHYD DT= 1.00 ce Area Storage ge Slope h ngs n ff.Inten.(r over	Area Tota (ha) = (mm) = (%) = (m) = (min) = (min	(ha)= 1 Imp(%)= 6 IMPERVIOUS 2.55 .60 4.90 500.00 .013	3.92 5.00 Dir. Cr PERVIOUS (1 1.37 2.50 6.40 35.00 .250	onn.(%)= 35.00
001:0094 * Area 501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e	ANDHYD DT= 1.00 ce Area Storage ge Slope h ngs n ff.Inten.(r	Area Tota (ha) = (mm) = (%) = (m) = (min) = (min	(ha)= 1 ImpeRVIOUS 2.55 6.60 4.90 500.00	3.92 5.00 Dir. Cr PERVIOUS (1 1.37 2.50 6.40 35.00 .250	onn.(%)= 35.00
001:0094 * Area 501 * Area 501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit	ANDHYD DT- 1.00 DT- 1.00 Ce Area Storage ge Slope h ngs n ff.Inten.(r coeff, Hyd. Tpeak	Area Tota (%) - (mm) - (%) - (min) - (min) - (min) - (cms) - (cm	(ha)= 1 Imp(%)= 6 IMPERVIOUS 2.55 60 4.90 500.00 .013 50.56 5.00 5.47 (ii 5.00 .21	3.92 5.00 Dir. C. PERVIOUS (i 1.37 2.50 35.00 .250 77.14 11.00) 10.57 (ii 11.00 .11	onn.(%) = 35.00
001:0094 * Area 501 * Area 501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit	ANDHYD DT- 1.00 DT- 1.00 Ce Area Storage ge Slope h ngs n ff.Inten.(r coeff, Hyd. Tpeak	Area Tota (%) - (mm) - (%) - (min) - (min) - (min) - (cms) - (cm	(ha) = 1 Imp(%) = 6 Impervious 2.55 .60 4.90 .013 50.56 5.00 5.47 (ii 5.00 .21 .19 3.00	3.92 5.00 Dir. C. PERVIOUS (i 1.37 2.50 35.00 .250 77.14 11.00) 10.57 (ii 11.00 .11	*TOTALS* .470 (iii)
001:0094 * Area 501 CALIB ST O6:501 SurfaG Dep. Avera Lengt Manni Max.e Stora Unit Unit PEAK TIME RUNOS	ANDHYD DT= 1.00 Ce Area Storage ge Slope h ngs n ff.Inten.(r ope Coeff. Hyd. Tpeak Hyd. Tpeak FLOW FLOW FLOW FLOW FLOW FLOW FLOW FROM FROM FROM FROM FROM FROM FROM FROM	(ha) = (sm) = (min) = (min) = (cms) = (cms) = (mn) = (mm)	(ha) = 1 Imp(%) = 6 IMPERVIOUS 2.55 60 4.90 500.00 .013 50.56 5.00 5.47 (iii 5.00 .21 19 3.00 80.30 80.30 80.90	3.92 5.00 Dir. C PERVIOUS (i 1.37 2.50 6.40 35.00 .250 11.00 10.57 (ii 11.00 11.00 11.00 28 3.00 25.06 80.90	*TOTALS*
001:0094 * Area 501 CALIB ST O6:501 SurfaG Dep. Avera Lengt Manni Max.e Stora Unit Unit PEAK TIME RUNOS	ANDHYD DT- 1.00 Ce Area Storage ge Slope h ngs n ff.Inten.(r over ge Coeff. Hyd. Tpeak	(ha) = (sm) = (min) = (min) = (cms) = (cms) = (mn) = (mm)	(ha)= 1 Imp(%)= 6 IMPERVIOUS 2.55 4.90 500.00 .013 50.56 5.00 5.47 (ii 5.00 .21 .19 3.00 80.30	3.92 5.00 Dir. C. PERVIOUS (i 1.37 2.50 6.40 35.00 .250 77.14 11.00 11.07 (ii 11.00 11.07 (ii 11.00 28 3.02 52.06	**TOTALS** 470 (iii) 3.000 61.944
001:0094-* * Area 501 * [CALIB ST] 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit Unit PEAK TIME RUNDOF TOTAL RUNDOF TOTAL RUNDOF ((1))	ANDHYD DT- 1.00 DT- 1.00 Ce Area Storage ge Slope h ngs n ff.inten.(r over ge Coeff. Hyd. Tpeak Hyd. Tpeak FLOW FLOW FLOW FLOW FLOW FLOW FLOW FLOW	(ha) = (mm) = (%) = (min) = (min) = (min) = (min) = (min) = (min) = (cms) = (cms) = (mn) = (cms) = (mn) = (cms) = (cms	1 Imp(%) - 6 IMPERVIOUS 2.55 2.50 0.00 0.01 50.00 0.13 50.56 5.00 5.47 (11 5.00 1.21 1.9 3.00 80.30 80.30 80.90 90.90 TED DOB PERVI	3.92 5.00 Dir. C. 1.37 2.55 Dir. C. 2.50 6.50 Dir. C. 2.50 77.14 11.00 11.100 1.11 .28 3.02 52.06 B0.90 .64	*TOTALS*
001:0094-* * Area 501 * [CALIB ST] 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit Unit PEAK TIME RUNDOF TOTAL RUNDOF TOTAL RUNDOF ((1))	ANDHYD DT- 1.00 DT- 1.00 Ce Area Storage ge Slope h ngs n ff.inten.(r over ge Coeff. Hyd. Tpeak Hyd. Tpeak FLOW FLOW FLOW FLOW FLOW FLOW FLOW FLOW	(ha) = (mm) = (%) = (min) = (min) = (min) = (min) = (min) = (min) = (cms) = (cms) = (mn) = (cms) = (mn) = (cms) = (cms	1 Imp(%) - 6 IMPERVIOUS 2.55 2.50 0.00 0.01 50.00 0.13 50.56 5.00 5.47 (11 5.00 1.21 1.9 3.00 80.30 80.30 80.90 90.90 TED DOB PERVI	3.92 5.00 Dir. C. 1.37 2.55 Dir. C. 2.50 6.50 Dir. C. 2.50 77.14 11.00 11.100 1.11 .28 3.02 52.06 B0.90 .64	*TOTALS*
001:0094-* * Area 501 * [CALIB ST] 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit Unit PEAK TIME RUNDOF TOTAL RUNDOF TOTAL RUNDOF ((1))	ANDHYD DT= 1.00 CC Area Storage ge Slope h ngs n ff.Inten.(r over ge Coeff. Hyd. Tpeak Hyd. Tpeak FIOW FORDAM	(ha) - (mm) - (min) -	1 fmg(%) = 6 1 fmg(%) = 6 1 MPERVIOUS 2.55 4.60 5.00 5.01 5.0.56 5.00 5.47 (11 5.00 80.30 80.30 80.30 80.90 90 TED FOR PERVI	3.92 5.00 Dir. C. 1.37 2.55 Dir. C. 2.50 6.50 Dir. C. 2.50 77.14 11.00 11.100 1.11 .28 3.02 52.06 B0.90 .64	*TOTALS*
Olio094- * Area 501 CALIB ST 06:501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e Stora Surfa Unit Unit Unit PEAK TIME RUNDS TOTAL RUNDS (i) (ii)	ANDHYD DT-1.00 DT-1.00 TAREA Storage ge Slope h ngs n ff.Inten.(r ower ge Coeff, Hyd. Tpeak Hyd. peak FFLOW TO PEAK F VOLUME RAINFALL F COEFFICI CN P 76 TIME STEP THAN THE S.	(ha) = (mm) = (min) = (mn) = (1 Imp(%) - 6 IMPERVIOUS 2.55 2.50 0.00 0.01 50.00 0.13 50.56 5.00 5.47 (11 5.00 1.21 1.9 3.00 80.30 80.30 80.90 90.90 TED DOB PERVI	3.92 5.00 Dir. C. FPERNIOUS (1 1.37 6.40 35.00 -2.50 77.14 11.00 11.07 11.00 .11 .28 3.02 52.06 6.09 .64 005 LOSSESS: e (Above)	*TOTALS*
Olio094- * Area 501 CALIB ST 06:501 Surfa Dep., Avera Avera Lengt Manni Max.e. Stora Unit Unit Unit FEAR TIME RUNDE TOTAL RUNDE TOTAL RUNDE (ii) (iii)	ANDHYD DT=1.00 DT=1.00 Ce Area Storage ge Slope h ngs n ff.Inten.(r ge Cover Hyd. Tpeak Hyd. Peak Hyd. Peak FLOW TO PEAK F VOLUME RAINFALL F COEFFICI CN P 766 THME STEP THAN THE: PEAK FLOW	(ha) = (mm) = (min) = (mn) =	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 2.55 4.90 500.00 .013 50.56 5.00 .21 1.00 80.90 99 TED FOR PERVI	3.92 5.00 Dir. C. FRENVOUS (1 1.33 1.250 6.40 35.00 .250 77.14 11.00 11.00 11.00 11.00 11.00 6.00 6.00 11.00 6.00 6.00 10.00 6.00 6.00 6.00 6.00 6.00 6.00	*TOTALS*
Olicop4 * Area 501 * ! CALIB ST 06:501 CALIB ST 06:501 Oscillation Oscilla	ANDHYD DT= 1.00 Ce Area Storage ge Slope h ngs n over ge Coeff. Hyd. Tpeak Hyd. peak FLOW TO PEAK F VOLUME RAINFALL F COEFFICH CN PROCEDU CN PROCEDU CN PROCEDU THEN TIPP FEAK FLOW	Area Tota (ha) - (s) - (s) - (s) - (mm) - (min)	1 (ha) = 1 Imp(%) = 6 (ha) = 1	3.92 5.00 Dir. C. C. S.	*TOTALS*
Olicop4 * Area 501 * ! CALIB ST 06:501 CALIB ST 06:501 Oscillation Oscilla	ANDHYD DT= 1.00 Ce Area Storage ge Slope h ngs n over ge Coeff. Hyd. Tpeak Hyd. peak FLOW TO PEAK F VOLUME RAINFALL F COEFFICH CN PROCEDU CN PROCEDU CN PROCEDU THEN TIPP FEAK FLOW	Area Tota (ha) - (s) - (s) - (s) - (mm) - (min) - (min) - (min) - (mm) - (mn) -	1 (ha) = 1 Imp(%) = 6 (ha) = 1	3.92 5.00 Dir. C. C. S.	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Olicops- Area 501 CALIB ST 06:501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e. Storaca Unit Unit Unit Unit Unit (ii) (ii) (iii) Olicops-	ANDHYD DT= 1.00 CC Area Storage ge Slope h ngs n ff.Inten.(t Overr ge Coeff. Hyd. Tpeak Hyd. Peak Hyd. Peak Hyd. Tpeak TO ERAK TO ERAK TO ERAK TO ERAK TO THE STEP THAN THE: PEAK FLOW VOLUME	Area Tota (ha) - (s) - (s) - (s) - (mm) - (min) - (min) - (min) - (mm) - (mn) -	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 2.50 2.50 4.90 500.00 .013 50.56 5.00 .21 3.00 .21 3.00 80.30 80.30 80.90 .99 TIDD FOR SCHOOL ULD BE SCHOOL ULD BE SCHOOL INCLUDE BASE	3.92 5.00 Dir. C. FPENVIOUS (1 1.37 1.37 1.37 1.37 1.37 1.37 1.37 1.3	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Olicops- Area 501 CALIB ST 06:501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e. Storaca Unit Unit Unit Unit Unit (ii) (ii) (iii) Olicops-	ANDHYD DT-1.00 ce Area Storage ge Slope h ngs n cover ge Coeff. Hyd. Tpeak Hyd. peak Hyd. peak FLOW TO PEAK F VOLUME RANNFALL F COEFFICH THAN THE: PEAK FLOW VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME	Area Area Tota Tota (man) = (min) = (min) = (min) = (min) = (min) = (cms) = (dnrs)	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 .60 4 .90 013 013 013 5 .50 5 .70 1 5 .00 80 .30 80 .30 80 .30 80 .90 90 TED FOR PERVILLE 1 INCLUDE BASE	3.92 5.00 Dir. C. C. S.	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Olico94 * Area 501 * Area 501 * CALIB ST 06:501 CALIB ST 06:501 Surfa Su	ANDHYD DT-1.00 ce Area Storage ge Slope h ngs n cover ge Coeff. Hyd. Tpeak Hyd. peak Hyd. peak FLOW TO PEAK F VOLUME RANNFALL F COEFFICH THAN THE: PEAK FLOW VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME	Area Area Tota Tota (man) = (min) = (min) = (min) = (min) = (min) = (cms) = (dnrs)	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 .60 4 .90 013 013 013 5 .50 5 .70 1 5 .00 80 .30 80 .30 80 .30 80 .90 90 TED FOR PERVILLE 1 INCLUDE BASE	3.92 5.00 Dir. C. C. S.	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Olicops- Area 501 CALIB ST 06:501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e. Storaca Unit Unit Unit Unit Unit (ii) (ii) (iii) Olicops-	ANDHYD DT-1.00 ce Area Storage ge Slope h ngs n cover ge Coeff. Hyd. Tpeak Hyd. peak Hyd. peak FLOW TO PEAK F VOLUME RANNFALL F COEFFICH THAN THE: PEAK FLOW VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME	Area Area Tota Tota (man) = (min) = (min) = (min) = (min) = (min) = (cms) = (dnrs)	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 1 .60 4 .90 013 013 013 5 .50 5 .70 1 5 .00 80 .30 80 .30 80 .30 80 .90 90 TED FOR PERVILLE 1 INCLUDE BASE	3.92 5.00 Dir. C. C. S.	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Olicops- Area 501 CALIB ST 06:501 CALIB ST 06:501 Surfa Dep. Avera Lengt Manni Max.e. Storaca Unit Unit Unit Unit Unit (ii) (ii) (iii) Olicops-	ANDHYD DT-1.00 ce Area Storage ge Slope h ngs n cover ge Coeff. Hyd. Tpeak Hyd. peak Hyd. peak FLOW TO PEAK F VOLUME RANNFALL F COEFFICH THAN THE: PEAK FLOW VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME	Area Area Tota Tota (man) = (min) = (min) = (min) = (min) = (min) = (cms) = (dnrs)	1 Imp(%) - 6 1 Imp(%) - 6 1 Imp(%) - 6 2.50 2.50 4.90 500.00 .013 50.56 5.00 .21 3.00 .21 3.00 80.30 80.30 80.90 .99 TIDD FOR SCHOOL ULD BE SCHOOL ULD BE SCHOOL INCLUDE BASE	3.92 5.00 Dir. C. C. S.	*TOTALS* 4.40 (iii) 3.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00

REQUIRED STORAGE VOLUME (ha.m.) = .0806
TOTAL HYDROGRAPH VOLUME (ha.m.) = .2428
% OF HYDROGRAPH TO STORE = 33.2100

NOTE: Storage was computed to reduce the Inflow peak to .212 (cms).

*** WARNING: Calculated volume may not be the maximum.

001:0096								
*								
* **********								
*********	******	*******	******	*****	*****			*****
	******	********	*****	******	*****			******
* 100 year -	12hr SC	S Type II						
*								
READ STORM		Filens	me: C:\SW	MHVM~1\	TAKEST	-1\10050	1012	
Ptotal= 9	9.70 mm	Commer	its: 100ye	ar SCS	12hr	-1 (10030	.312	
	TIME	RAIN	TIME byo	RAIN	TIME	RAIN mm/h	I TIME	RAIN
	1.00	2.493	4.00 4	.486	7.00	9.970	hrs 10.00 3 11.00 3 12.00	3.490
	2.00	2.493	5.00 8	.474	8.00	2.243	11.00	3.490
	3.00	3.988	6.00 52	.343	9.00	2.243	12.00	3.988
001:0097								
*								
*								
* * Area 101								
*								
CALIB STAN 01:101	DHYD	Area	(ha) =	50.00	3) ni∽	Conn	(8) = 35 00	1
1 01:101		10tai		50.00	, 511	. com.	,	•
			IMPERVIOU	S PE	ERVIOUS	(i)		
Surface	Area	(ha) = (mm) = (%) = (m) =	.14		2.50			
Dep. St	orage	(mm) =	2 00		2.50			
Average Length	эторе	(m) =	42.00		35.00			
Manning	s n	-	.013		.250			
Max.eff	.Inten. (mm/hr) = (min)	52.34		57.93			
Storage	Coeff.	(min) = (min) =	1.00	(ii)	9.00 8.68	(ii)		
Unit Hy	d. Tpeak	(min) =	1.00		9.00			
Unit Hy	d. peak	(cms) =	.86		.13		TOTALS*	
PEAK FL	OW	(cms) =	.01		.02		.036 (iii	.)
TIME TO	PEAK	(hrs) =	5.65		6.00		6.000	
RUNOFF	VOLUME	(hrs) = (mm) = (mm) =	99.10		67.96		78.862 99.701	
TOTAL R	AINFALL COEFFICII	(mm) =	99.70		99.70		99.701	
RUNUFF	COEFFICI	PMI -			.00		. / 51	
(i) C	N PROCED	URE SELECT	ED FOR PE	RVIOUS	LOSSES	:		
	N* = 82	.0 Ia = (DT) SHOU	Dep. Sto	rage	(Above)			
(11) T	HAN THE	STORAGE CO	DEFETCIENT	TTEK OF	K EQUAL			
		DOES NOT			IF AN	Y.		
001:0098								
*								
* Area 201								
* 								
CALIB STAN	DHYD	Area	(ha)=	. 32	2			
CALIB STAN 02:201	DT= 1.00	Total	Imp(%)=	50.00	Dir	. Conn.	(%) = 35.00)
			TMPERVIOU		RVTOUS			
	Area	(h n) =	16		.16	(1)		
	orage	(mm) =	.60 2.80 20.00		2 50			
Surface Dep. St	Slope	(%) =	2.80		2.80			
Surface Dep. St Average		(m) =	20.00		35.00			
Average Length		-	.013		.250			
Average	5 11		52.34		58.01			
Average Length Manning		nm/hr)=			8 00			
Average Length Manning Max.eff	.Inten.((min)	1.00			(11)		
Average Length Manning Max.eff	.Inten.((min)	1.00	(ii)	8.25	()		
Average Length Manning Max.eff Storage Unit Hy	.Inten.() over Coeff. d. Tpeak	(min) (min) = (min) =	52.34 1.00 .93 1.00	(ii)	8.00	(11)		
Average Length Manning Max.eff Storage Unit Hy	.Inten.((min) (min) = (min) =	1.00 .93 1.00 1.12	(ii)	8.25 8.00 .14		*TOTALS*	
Average Length Manning Max.eff Storage Unit Hy Unit Hy	.Inten. (r over Coeff. d. Tpeak d. peak	(min) (min) = (min) = (cms) =	1.12		8.00		.041 (iii	.)
Average Length Manning Max.eff Storage Unit Hy Unit Hy PEAK FL	.Inten.() over Coeff. d. Tpeak d. peak OW PEAK	(min) (min) = (min) = (cms) = (cms) = (hrs) =	1.12		8.00 .14	,	.041 (iii	.)
Average Length Manning Max.eff Storage Unit Hy Unit Hy PEAK FL	.Inten.() over Coeff. d. Tpeak d. peak OW PEAK	(min) (min) = (min) = (cms) = (cms) = (hrs) =	.02 5.62 99.10		8.00 .14 .03 6.00 67.96	,	.041 (iii 6.000 78.862	i)
Average Length Manning Max.eff Storage Unit Hy Unit Hy PEAK FL TIME TO RUNOFF TOTAL R	.Inten. (r over Coeff. d. Tpeak d. peak	(min) (min) = (min) = (cms) = (cms) = (hrs) = (mm) = (mm) =	1.12		8.00 .14	,	.041 (iii	L)

```
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
* Area 301
 Max.eff.Inten.(mm/hr)=
                                  52.34 83.89
    over (min)
Storage Coeff. (min)=
Unit Hyd. Tpeak (min)=
Unit Hyd. peak (cms)=
                                  7.00 12.00
6.60 (ii) 11.53 (ii)
7.00 12.00
.17 .10
                                                               *TOTALS*
    PEAK FLOW (cms) = .31 .75
TIME TO FEAK (hrs) = 6.00 6.02
RUNOFF VOLUME (mm) = 99.09 69.11
TOTAL RAINFALL (mm) = 99.70 99.70
RUNOFF COEFFICIENT = .99 .69
                                                               1.054 (iii)
6.000
                                                               76.618
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
      CN* = 76.5 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
     THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0100-----
 COMPUTE VOLUME |
ID:03 (301 ) |
                                               (hrs)
.233
6.000
7.049
           START CONTROLLING AT .000
INFLOW HYD. PEAKS AT 1.054
STOP CONTROLLING AT .211
           REQUIRED STORAGE VOLUME (ha.m.) = .3007
TOTAL HYDROGRAPH VOLUME (ha.m.) = .6467
% OF HYDROGRAPH TO STORE = 46.5036
                                               .3007
          NOTE: Storage was computed to reduce the Inflow peak to .211 (cms).
      *** WARNING: Calculated volume may not be the maximum.
001:0101-----
* Area 401
Unit Hyd Qpeak (cms) = 1.136
    PEAK FLOW (cms)= .908 (i)
TIME TO PEAK (hrs)= 6.167
RUNOFF VOLUME (mm)= 47.331
TOTAL RAINFALL (mm)= 99.700
RUNOFF COEFFICIENT = .475
    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0102-----
* Area 501
| CALIB STANDHYD | Area (ha)= 3.92
| 06:501 DT=1.00 | Total Imp(%)= 65.00 Dir. Conn.(%)= 35.00
```

PERVIOUS (i) 1.37 2.50 6.40

35.00

Manni	ngs n	-	.013		.250			
					00 45			
Max.e	ff.Inten.(over ge Coeff.	mm/nr)=	52.34	(ii)	10.00			
Store	ne Coeff	(min) =	5.00	(33)	10.00	(33)		
Unit	Hyd. Tpeak	(min) =	5.00	(11)	10.00	(11)		
Unit	Hyd. peak	(cms) =	.21		.11			
						*	TOTALS*	
PEAK		(cms) = (hrs) =	.20 6.00 99.09 99.70		.30		.504	(iii)
TIME	TO PEAK F VOLUME RAINFALL F COEFFICI	(nrs)=	00.00		6.00 68.91 99.70		79.481	
RUNUE	DATMEALL	(mm) =	99.09		00.91		99.701	
RUNOF	F COEFFICI	ENT =	.99		.69		.797	
(i)	CN PROCED	URE SELECT	ED FOR PI	ERVIOUS	LOSSES	:		
	CN* = 76 TIME STEP	.5 Ia =	Dep. Sto	orage	(Above)			
(11)	TIME STEP	(DT) SHOU	LD BE SMA	ALLER O	R EQUAI			
(1111)	PEAK FLOW				W TE AN	rv.		
(111)	FEAR FLOW	DOES NOT	INCLUDE I	DADEFLO	n it Mi			
001:0103								
*								
COMPUTE ID:06 (VOLUME				TIME			
ID:00 (START CON INFLOW HY		DISCHI	ARGE ol	(hrs)			
	START CON	TROTITNG A	T 00	10	(hrs) .233 6.000	1		
	INFLOW HY	D. PEAKS A	T .50	14	6.000	,		
	STOP CON	D. PEAKS A	T .24	48	6.210			
	REQUIRED	STORAGE VO	LUME (ha.	.m.)-	.0750)		
	TOTAL HYD	ROGRAPH VC	LUME (ha.	.m.)-	.3116			
	% OF HYDR	STORAGE VO ROGRAPH VO OGRAPH TO	STORE	-	24.068			
	NOTE: SC	orage was ak to	249 (or	to rea	uce the	INITIOW		
	pe	ak to	.240 (C	115).				
***	WARNING: C	alculated	volume ma	ay not	be the	maximum.		
001:0104								
*								
*								

		******	******	*****	* * * * * * *	******	*****	*********
		*********	*******			*******	*******	
		*********	*******			*******	*******	
	*********	*********	*******			*******	*******	
********** * 2 year -	********** ********** 12hr AES	*********	*******			*******	*******	
********** * 2 year -	************ 12hr AES	*********	********	· · · · · · · · · · · · · · · · · · ·	* * * * * * * * * * * * * * * * * * *	*******	*******	
********** * 2 year -	************ 12hr AES	*********	********	· · · · · · · · · · · · · · · · · · ·	* * * * * * * * * * * * * * * * * * *	*******	*******	
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ******** Filena Commen	********	· · · · · · · · · · · · · · · · · · ·	* * * * * * * * * * * * * * * * * * *	*******	*******	
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ********* ********** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ********* ********** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ********* ********** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ********* ********** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ********* ********** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
********** * 2 year - * READ STO Ptotal=	12hr AES RM 44.80 mm	********** ******** Filena Commen	********* ********* me: C:\SW	****** ****** ******* WMHYM~1	****** ****** ****** \LAKES1	~1\2AES1	2.stm	***********
* 2 year - * READ STC Ptotal-	12hr AES 12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SV tts: 2 yes TIME hrs # 4.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIME 7.00 8.00 9.00	~1\2AES1 RAIN mm/hr 1.448	2.stm	ME RAIN 'S mm/hr 00 .000 00 .000 00 .000
* 2 year - * READ STC Ptotal-	12hr AES 12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SV tts: 2 yes TIME hrs # 4.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIME 7.00 8.00 9.00	~1\2AES1 RAIN mm/hr 1.448	2.stm	ME RAIN
* 2 year - * READ STC Ptotal-	12hr AES 12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SV tts: 2 yes TIME hrs # 4.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIME 7.00 8.00 9.00	~1\2AES1 RAIN mm/hr 1.448	2.stm	ME RAIN 'S mm/hr 00 .000 00 .000 00 .000
* 2 year - * * * * * * * * * * * * * * * * * *	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SV tts: 2 yes TIME hrs # 4.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIME 7.00 8.00 9.00	~1\2AES1 RAIN mm/hr 1.448	2.stm	ME RAIN 'S mm/hr 00 .000 00 .000 00 .000
* 2 year - * READ STC Ptotal-	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SV tts: 2 yes TIME hrs # 4.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIME 7.00 8.00 9.00	~1\2AES1 RAIN mm/hr 1.448	2.stm	ME RAIN 'S mm/hr 00 .000 00 .000 00 .000
2 year - READ STC Ptotal= 001:0105 Area 101	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SW tts: 2 yes TIME hrs s 4.00 6 6.00 :	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIMH hrs 7.00 8.00 9.00	2~1\2AES1 C RAIN mm/hr 1.344 0.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - READ STC Ptotal= 001:0105 Area 101	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SW tts: 2 yes TIME hrs s 4.00 6 6.00 :	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIMH hrs 7.00 8.00 9.00	2~1\2AES1 C RAIN mm/hr 1.344 0.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - READ STC Ptotal= 001:0105 Area 101	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SW tts: 2 yes TIME hrs s 4.00 6 6.00 :	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKES1 12hr TIMH hrs 7.00 8.00 9.00	2~1\2AES1 C RAIN mm/hr 1.344 0.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
* 2 year - * * * * * * * * * * * * * * * * * *	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00	Filens Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SW ts: 2 yes TIME hrs s 4.00 6 5.00 6 6.00 3	WMHYM~1 ar AES RAIN mm/hr 6.720 6.272 3.584	LAKEST12hr TIMH hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00 ANDBYD DT 1.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SN ts: 2 yes ts: 2 yes 4.00 6 6.00 1 (ha)= Imp(%)= IMPEBUIOI	WMHYM~1 ar AES RAIN mm/hr 5.720 6.272 3.584 3.584	LAKEST 12hr TIME hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00 ANDBYD DT 1.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SN ts: 2 yes ts: 2 yes 4.00 6 6.00 1 (ha)= Imp(%)= IMPEBUIOI	WMHYM~1 ar AES RAIN mm/hr 5.720 6.272 3.584 3.584	LAKEST 12hr TIME hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year	12hr AES RM 44.80 mm THME hrs 1.00 2.00 3.00 ANDHYD DT= 1.00 ce Area Storage	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SN ts: 2 yes ts: 2 yes 4.00 6 6.00 1 (ha)= Imp(%)= IMPEBUIOI	WMHYM~1 ar AES RAIN mm/hr 5.720 6.272 3.584 3.584	LAKEST 12hr TIME hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
* 2 year - READ STC PEDAD ST	12hr AES RRM 44.80 mm TIME hrs 1.00 2.00 3.00 ANDHYD DP= 1.00 Ce Area Storage ge Slove ge Slove ge Slove	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SN ts: 2 yes ts: 2 yes 4.00 6 6.00 1 (ha)= Imp(%)= IMPEBUIOI	WMHYM~1 ar AES RAIN mm/hr 5.720 6.272 3.584 3.584	LAKEST 12hr TIME hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
* 2 year - READ STC PEDAD ST	12hr AES RRM 44.80 mm TIME hrs 1.00 2.00 3.00 ANDHYD DP= 1.00 Ce Area Storage ge Slove ge Slove ge Slove	Filena Commen RAIN mm/hr 8.064 9.408 8.960	me: C:\SN ts: 2 yes ts: 2 yes 4.00 6 6.00 1 (ha)= Imp(%)= IMPEBUIOI	WMHYM~1 ar AES RAIN mm/hr 5.720 6.272 3.584 3.584	LAKEST 12hr TIME hrs 7.00 8.00 9.00	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
* 2 year - READ STC PEDAD ST	12hr AES RM 44.80 mm THME hrs 1.00 2.00 3.00 ANDHYD DT= 1.00 ce Area Storage	Filena Commen RAIN mm/hr 8.064 9.408 8.960 Total Area Total (ha) = (mm) = (%) = (m) = (m	me: C:\SW tts: 2 yes TIME hrs = 4.00	MMHYM-1 RES REAL RES	TIMM hrs 7.00 8.00 0 011 1 250 0 0 012 1 2 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RAIN mm/hr 1.344 4.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - READ STC PEOAD STC READ STC Ptotal Ptotal Ptotal CALIB ST 01:101 CALIB ST 04:101 Surfa Dep. Avera Lengty Manni	12hr AES RM 44.80 mm 44.80 mm 1.00 2.00 3.00	Filena Commen RAIN mm/hr 8.064 9.408 8.960 Total Area Total (ha) = (mm) = (%) = (m) = (m	me: C:\SW tts: 2 yes TIME hrs = 4.00	MMHYM-1 RES REAL RES	TIMM hrs 7.00 8.00 0 011 1 250 0 0 012 1 2 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RAIN mm/hr 1.344 4.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - 1 READ STC 1 READ STC 1 Pitchal O01:0105 Area 101 O1:0101 Surfa Dep. Avera Lengt Manni Max.e	12hr AES RM 44.80 mm TIME hrs 1.00 2.00 3.00 ANDHYD DT 1.00 Ce Avea Storage ge Slope h g storage ff. Inten. (covered to the storage of	Filena Commen RAIN mm/hr 8.064 9.408 8.960 Total Area Total (ha) = (mm) = (%) = (m) = (m	me: C:\SW tts: 2 yes TIME hrs = 4.00	MMHYM-1 RES REAL RES	TIMM hrs 7.00 8.00 0 011 1 250 0 0 012 1 2 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RAIN mm/hr 1.344 4.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - READ STO Ptotal - Ptotal - Ool:0105 Area 101 CALIB ST Ol:101 Surfa Dep. Avera Avera Avera Stora S	12hr AES RM 44.80 mm 144.80 mm 150 mm 1	Filena Commen RAIN mm/hr 8.064 9.408 8.960 Total Area Total (ha) = (mm) = (%) = (m) = (m	me: C:\SW tts: 2 yes TIME hrs = 4.00	MMHYM-1 RES REAL RES	TIMM hrs 7.00 8.00 0 011 1 250 0 0 012 1 2 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RAIN mm/hr 1.344 4.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - 1 READ STC 1 READ STC 1 Ptotal O01:0105 2 Area 101 01:101 01:101 Surfa Dep. Avera Lengt Manni Max.e Stora	12hr AES RW 44.80 mm 44.80 mm 100 2.00 3.00 ANDBYD DP= 1.00 cc Area Storage ge Slope h ngs n ff.Inten.(over	Filena RAIN mm/hr 8.064 9.408 8.960	(ha)= Imp(*)=	RAIN mm/hr 1	TIMM hr: 7.00 A 8 8 0 Dij. 8 2.50 2.50 2.50 6.71 20 0.00 20 0.01	RAIN mm/hr 1.344 4.448	2.stm	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - 1 READ STC 1 READ STC 1 Ptotal O01:0105 2 Area 101 01:101 01:101 Surfa Dep. Avera Lengt Manni Max.e Stora	12hr AES RM 44.80 mm 144.80 mm 150 mm 1	Filena RAIN mm/hr 8.064 9.408 8.960	me: C:\SW tts: 2 yes TIME hrs = 4.00	RAIN mm/hr 1	TIMM hrs 7.00 8.00 0 011 1 250 0 0 012 1 2 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	~1\2AES1 : RAIN : mm/hr : 1.344 : .448 : .400	2.stm TIN	ME RAIN rs mm/hr 00 .000 0 .000 0 .000
2 year - 1 READ STC 1 READ STC 1 Ptotal Ptotal 1 Ptotal 1 OALIB ST 1 01:01 Surfa Puep. Avera Lengt Manni Max.e Stora Unit Unit	12hr AES RM 44.80 mm 44.80 mm 44.80 mm 1.00 2.00 3.00 ANDHYD DT-1.00 ce Area Storage ge Slope h ngs n ff.Inten.(over ge Coeff, Inten.k Hyd.peak	Filenam Commer RAIN mm/hr 8.064 9.408 8.960	me: C:\S% ts: 2 yes Thrs r 4.00 (6 5.00 (6 6.00 2 (ha)= Imp(%)= IMPERVIOU .14 .60 .2.90 .013 .9.41 .3.00 .39	RAIN	LIAKES1 12hr TIMM hrs. 12hr 7.007 7.007 8.009 9.00 8 0 Dij. 14 2.50 2.50 2.50 2.50 2.20 2.20 2.20 2.20	: RAIN mm/hr	2.stm	ME RAIN 18:8 mm/hr 10:00 mm/hr
2 year - 1 READ STC 1 READ STC 1 Pitchal O01:0105 Area 101 O1:0101 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit	12hr AES RW 44.80 mm 44.80 mm 100 2.00 3.00 ANDMYD DT-1.00 Cce Area Storage ge Slope h ngs n ff.inten.(over ge Coeff. Hyd. Tpeak Hyd. Tpeak Hyd. Tpeak Hyd. Peak Hyd. Peak	Filena Commen RAIN mm/hr 8,06r 8,960	me: C:\SW ts: 2 yes TIME hrs s 4.00 (6 5.00 (6 6.00) Imp(%) = IMPERON 14 6.60 2.00 42.00 42.00 42.00 43.00 43.00 3.30	RAIN mm/hr m-1 mm/hr m-1 mm/hr m-1 mm/hr m-1 m-1	LIAKES1 12hr TIMM hrs. 12hr 7.007 7.007 8.009 9.00 8 0 Dij. 14 2.50 2.50 2.50 2.50 2.20 2.20 2.20 2.20	: RAIN mm/hr	2.stm	ME RAIN 18:8 mm/hr 10:00 mm/hr
2 year - 1 READ STC 1 READ STC 1 Pitchal O01:0105 Area 101 O1:0101 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit	12hr AES RW 44.80 mm 44.80 mm 100 2.00 3.00 ANDMYD DT-1.00 Cce Area Storage ge Slope h ngs n ff.inten.(over ge Coeff. Hyd. Tpeak Hyd. Tpeak Hyd. Tpeak Hyd. Peak Hyd. Peak	Filena Commen RAIN mm/hr 8,06r 8,960	me: C:\SW ts: 2 yes TIME hrs s 4.00 (6 5.00 (6 6.00) Imp(%) = IMPERON 14 6.60 2.00 42.00 42.00 42.00 43.00 43.00 3.30	RAIN mm/hr m-1 mm/hr m-1 mm/hr m-1 mm/hr m-1 m-1	LIAKES1 12hr TIMM hrs. 12hr 7.007 7.007 8.009 9.00 8 0 Dij. 14 2.50 2.50 2.50 2.50 2.20 2.20 2.20 2.20	: RAIN mm/hr	2.stm TIN	ME RAIN 18:8 mm/hr 10:00 mm/hr
2 year - 1 READ STC 1 READ STC 1 Pitchal O01:0105 Area 101 O1:0101 Surfa Dep. Avera Lengt Manni Max.e Stora Unit Unit	12hr AES RW 44.80 mm 44.80 mm 100 2.00 3.00 ANDMYD DT-1.00 Cce Area Storage ge Slope h ngs n ff.inten.(over ge Coeff. Hyd. Tpeak Hyd. Tpeak Hyd. Tpeak Hyd. Peak Hyd. Peak	Filena Commen RAIN mm/hr 8,06r 8,960	me: C:\SW ts: 2 yes TIME hrs s 4.00 (6 5.00 (6 6.00) Imp(%) = IMPERON 14 6.60 2.00 42.00 42.00 42.00 43.00 43.00 3.30	RAIN mm/hr m-1 mm/hr m-1 mm/hr m-1 mm/hr m-1 m-1	LIAKEST 12hr TIMM hr: 1,000 1,		2.stm TIN h h 10.0 1	ME RAIN 18:8 mm/hr 10:00 mm/hr
2 year - PEAD STO PEAD STO Ptotal- Ol:0105 Area 101 CALIB ST Ol:101 Surfa Out. Surfa Out.	12hr AES RM 44.80 mm 44.80 mm 51.000 3.00 ANDHYD DT-1.00 DT-1.00 Ce Area Storage ge Slope h ngs n ff.Inten.0 over ge Coeff. Hyd. Tpeak Hyd. Peak FLOW FLOW FLOW FLOW FLOW FLOW FLOW FLOW	Filena Comment RAIN mm/hr 8.064 9.408 8.960 1	mme: C:\Six: tas: 2 yes TIME hrs r : 100,000 : (ha)- Imp(s)- IMPERVIOU 	NMHYM-1 ar AES RAIN mm/hr 1 5.720 1 3.584 1	**************************************		2.stm TIN	ME RAIN 18:8 mm/hr 10:00 mm/hr
2 year - PEAD STO PEAD STO Ptotal- Ol:0105 Area 101 CALIB ST Ol:101 Surfa Out. Surfa Out.	12hr AES RW 44.80 mm 44.80 mm 100 2.00 3.00 ANDMYD DT-1.00 Cce Area Storage ge Slope h ngs n ff.inten.(over ge Coeff. Hyd. Tpeak Hyd. Tpeak Hyd. Tpeak Hyd. Peak Hyd. Peak	Filena Comment RAIN mm/hr 8.064 9.408 8.960 1	me: C:\SW ts: 2 yes TIME hrs s 4.00 (6 5.00 (6 6.00) Imp(%) = IMPERON 14 6.60 2.00 42.00 42.00 42.00 43.00 43.00 3.30	NMHYM-1 ar AES RAIN mm/hr 1 5.720 1 3.584 1	**************************************		2.stm TIN h h 10.0 1	ME RAIN 18:8 mm/hr 10:00 mm/hr

- (1) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 82.0 Ia Dep. Storage (Above)
 (11) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
 (11) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

* * Area 201				
*				
CALIB STANDHYD 02:201 DT= 1.00	Area Total In	(ha)= np(%)= 50	.32 .00 Dir. Co	onn.(%)= 35.00
	IME	ERVIOUS	PERVIOUS (i)	
Surface Area Dep. Storage Average Slope Length Mannings n	(ha) = (mm) =	.16	.16 2.50	
Average Slope	(%) =	2.80	2.80	
Mannings n	(m) =	.013	.250	
Max.eff.Inten.(mm		9.41	6.72	
over (Storage Coeff. (min) min)=	2.00	19.00 19.18 (ii)	
Unit Hyd. Tpeak (min) =	1.84 (ii) 2.00	19.00	
Unit Hyd. peak (cms) =	.59	.06	*TOTALS*
PEAK FLOW (cms) =	.00	.00	.006 (iii)
TIME TO DEAY /	brol-	1.75	3.12	3.000
RUNOFF VOLUME TOTAL RAINFALL	(mm) =	44.20 44.80	21.43	29.403 44.800
RUNOFF COEFFICIEN	TT =	.99	.48	.656
(i) CN PROCEDUR	E SELECTED	FOR PERVIO	US LOSSES:	
CN* = 82.0 (ii) TIME STEP (Ia = De	p. Storage	(Above)	
THAN THE ST	ORAGE COEFE	ICIENT.		
(iii) PEAK FLOW D	OES NOT INC	LUDE BASEF	LOW IF ANY.	
001:0107				
* Area 301				
*				
CALIB STANDHYD 03:301 DT= 1.00	Area Total In	(ha) = 8 up(%) = 60	.44 .00 Dir. Co	onn.(%)= 25.00
	TMT	PERVIOUS	PERVIOUS (i)	
Surface Area	(ha) =	5.06	3.38	
Average Slope	(mm) = (%) =	4.90	6.40	
Surface Area Dep. Storage Average Slope Length	(m) = 7	00.00	35.00	
Mannings n	-	.013	.250	
Max.eff.Inten.(mm	/hr)=	9.41	9.88	
over (Storage Coeff. (min) min)=	13.00	25.00 24.72 (ii)	
Unit Hyd. Tpeak (min) =	9.41 13.00 13.12 (ii) 13.00	25.00	
Unit Hyd. peak (cms) =	.09	.05	*TOTALS*
PEAK FLOW (cms) =	.05	.09	*TOTALS* .137 (iii)
TIME TO DEAK (hre)=	2.02	3.20	3.067
RUNOFF VOLUME TOTAL RAINFALL	(mm) =	44.20 44.80	22.20 44.80	27.705 44.800
RUNOFF COEFFICIEN	(mm) =	.99	.50	.618
(i) CN PROCEDUR	E SELECTED	FOR PERVIO	US LOSSES:	
CN* = 76.5 (ii) TIME STEP (Ia = De	p. Storage	(Above)	
(11) TIME STEP (THAN THE ST	DT) SHOULD ORAGE COEFE	BE SMALLER	OR EQUAL	
(iii) PEAK FLOW D			LOW IF ANY.	
001:0108				
*				
ROUTE RESERVOIR IN>03:(301) OUT<04:(POND)	Requeste	d routing	time step =	1.0 min.
IN>03:(301)		OTTES FOR	omonion mini	
OUTCO4:(POND)	OUTFLOW	STORAGE	STORAGE TABI OUTFLOW (cms)	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	.000	.0000E+00	1 .059	.3300E+00 .3600E+00
	.009	.6000E-01	1 .068	.3900E+00
	.011	.9000E-01	.068	
	.026	.1200E+00 .1500E+00	1 .070	.4500E+00 .4800E+00 .5100E+00
	.039	.1800E+00	073	.5100E+00
	.043	.2100E+00	1 077	.5400E+00
	.048	.2400E+00 .2700E+00	1 .000	.5700E+00 .0000E+00
	.055	.3000E+00	1 .000	.0000E+00

QPEAK (cms) .137 .038 .000

AREA (ha) 8.44 8.44 R.V. (mm) 27.705 27.704 .000

TPEAK (hrs) 3.067 6.667

ROUTING RESULTS
INFLOW >03: (301)
OUTFLOW<04: (POND)
OVERFLOW<**: (000001)

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

PEAK FLOW REDUCTION [Qout/Qin](*)= 27.702
TIME SHIFT OF PEAK FLOW (min)= 216.00
MAXIMIM STORAGE USED (ha m)= 1762F+00

001:0109	
** Area 401 CALIS NASHYD Area (ha)= 13.38 Curve Number (CN)=72.2(05:401 DT= 2.00 Ia (mm)= 4.000 # of Linear Res.(N)= 3.00 Unit Hyd Opeak (cms)= 1.136	
* (CALIB NASHYD Area (ha)= 13.38 Curve Number (CN)=72.2(05:401 DT=2.00 Ia (mm)= 4.000 # of Linear Res.(N)= 3.0(U.H. Tp(hrs)= .450	
Unit Hyd Qpeak (cms) = 1.136	
Unit Hyd Qpeak (cms) = 1.136	
Unit Hyd Qpeak (cms) = 1.136)
Unit Hyd Qpeak (cms)= 1.136)
Unit Hyd Qpeak (cms)= 1.136	
PEAK FLOW (cms)= .101 (i) TIME TO PEAK (hrs)= 5.067	
TIME TO PEAK (hrs)= 5.067	
RUNOFF VOLUME (mm) = 12.010	
TOTAL RAINFALL (mm) = 44.800 RUNOFF COEFFICIENT = .268	
KONOFF COEFFICIENT200	
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
001:0110	
* * Area 501	
*	
CALTE STANDAYD Area (ha)= 3 92	
CALIB STANDHYD	
IMPERVIOUS ENVIOUS (1)	
Surface Area (ha)= 2.55 1.37 Dep. Storage (mm)= .60 2.50	
Average Slope (%) = 4.90 6.40 Length (m) = 500.00 35.00	
Mannings n = .013 .250	
Max.eff.Inten.(mm/hr)= 9.41 9.78 over (min) 11.00 22.00 Storage Coeff. (min)= 10.72 (ii) 22.37 (ii) Unit Hyd. Tpeak (min)= 11.00 22.00	
Storage Coeff. (min) = 10.72 (ii) 22.37 (ii)	
Unit Hyd. Tpeak (min) = 11.00 22.00	
Unit Hyd. peak (cms)= .10 .05	
PEAK FLOW (cms)= .04 .03 .068 (iii) TIME TO PEAK (hrs)= 2.00 3.15 3.033	
PERK FLOW (cms) = .04 .03 .066 (iii) TIME TO PERK (hrs) = .00 3.15 3.033 RUNDFF VOLUME (mm) = 44.20 22.09 29.830 TOTAL RAINFALL (mm) = 44.80 44.80 44.80	
RUNOFF COEFFICIENT = .99 .49 .666	
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 76.5 Ia = Dep. Storage (Above)	
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	
THAN THE STORAGE COEFFICIENT.	
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
001:0111	
ROUTE RESERVOIR Requested routing time step = 1.0 min. IN-DG:(501) OUT<07:(POND) OUTLFOW STORAGE TABLE	
IN>06:(501) OUT<07:(POND) OUTLFOW STORAGE TABLE	
OUTFLOW STORAGE OUTFLOW STORAGE	
(cms) (ha.m.) (cms) (ha.m.) .000 .0000E+00 .074 .1200E+00 .004 .1500E-01 .080 .1350E+00	
.005 .3000E-01 .086 .1500E+00	
.006 4500E-01 .092 1650E+00 .036 .6000E-01 .098 .1800E+00	
.006 .4500E-01 .092 .1650E+00 .036 .6000E-01 .098 .1800E+00 .048 .7500E-01 .325 .1950E+00	
.048 .7500E-01 .325 .1950E+00 .058 .9000E-01 .735 .2100E+00 .066 .1050E+00 .000 .0000E+00	
.058 .9000E-01 .735 .2100E+00 .066 .1050E+00 .000 .0000E+00	
ROUTING RESULTS AREA QPEAK TPEAK R.V.	
ROUTING RESULTS AREA QPEAR TPEAR R.V. (mm)	
(ha) (cms) (hrs) (mm) INFLOW >06: (501) 3.92 .068 3.033 29.830	
OUTFLOW<07: (POND) 3.92 .041 5.417 29.829 OVERFLOW<**: (000001) .00 .000 .000 .000	
OVERTION("". (00001) .000 .000 .000	
TOTAL NUMBER OF SIMULATED OVERFLOWS = 0	
CUMULATIVE TIME OF OVERFLOWS (hours) = .00 PERCENTAGE OF TIME OVERFLOWING (%) = .00	
industrial of find overtheories (*)00	
PEAK FLOW REDUCTION [Qout/Qin](%) = 60.396	
TIME SHIFT OF PEAK FLOW (min) = 143.00	
1100 OHILL OF PRINCIPAL (MIN) = 143.00	

MAXIMUM STORAGE USED (ha.m.)=.6665E-01

001:0112	

* 5year - 12hr AES *	
READ STORM Filename: C:\SWMHYM~1\LAKEST~1\5# Ptotal= 59.60 mm Comments: 5 year AES 12hr	AES12.stm
TIME RAIN TIME RAIN TIME F hrs mm/hr hrs mm/hr hrs mm/hr hrs mm hr hrs mm hr hrs mm 1.00 10.728 4.00 8.940 7.00 1.200 12.516 5.00 8.344 8.00 .300 11.920 6.00 4.768 9.00 .	RAIN TIME RAIN
1.00 10.728 4.00 8.940 7.00 1.	788 10.00 .000
2.00 12.516 5.00 8.344 8.00 .	.596 11.00 .000
001:0113	
* *	
* Area 101	
*	
CALIB STANDHYD Area (ha)= .28 01:101 DT= 1.00 Total Imp(%)= 50.00 Dir. Cor	nn.(%)= 35.00
IMPERVIOUS PERVIOUS (i) Surface Area (ha)= .14 .14	
Dep. Storage (mm) = .60 2.50	
Surface Area (ha)14 .14 Dep. Storage (mm)60 .2.50 Average Slope (%) - 2.90 .2.90 Length (m) - 42.00 .35.00	
Max.eff.Inten.(mm/hr) = 12.52 10.35 over (min) 3.00 17.00 Storage Coeff. (min) = 2.53 (ii) 16.97 (ii) Unit Hyd. Tpeak (min) = 3.00 17.00 Unit Hyd. peak (cms) = .42 .07	
over (min) 3.00 17.00	
over (min) 3.00 17.00 Storage Coeff. (min)= 2.53 (ii) 16.97 (ii) Unit Hyd. Tpeak (min)= 3.00 17.00	
Unit Hyd. peak (cms)= .42 .07	*TOTALS*
PEAK FLOW (cms) = .00 .00	.007 (iii)
PEAK FLOW (cms) = .00 .00 TIME TO PEAK (hrs) = 1.48 3.07 RUNDOFF VOLUME (mm) = 59.00 33.08 TOTAL RAINFALL (mm) = 59.60 59.60	3.000 42.151
RUNOFF VOLUME (mm) = 59.00 33.08 TOTAL RAINFALL (mm) = 59.60 59.60	59.600
RUNOFF COEFFICIENT = .99 .55	.707
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	
CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	
THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	
001:0114	
* Area 201	
* Area 201	
CALIB STANDHYD Area (ba)= 32	
CALIB STANDHYD	nn.(%)= 35.00
02:201 Dr- 1.00 Total Imp(%) = 50.00 Dir. Cor Surface Area (ha) = 16	
Surface Area (ha)= .16 .16 Dep. Storage (mm)= .60 2.50 Average Slope (%)= 2.80 2.80	
Dep. Storage (mm) = .60 2.50 Average Slope (%) = 2.80 2.80 Length (m) = 20.00 35.00	
Average Slope (%) = 2.80 2.80 Length (m) = 20.00 35.00 Mannings n = .013 .250	
-	
Max.eff.Inten.(mm/hr) = 12.52 10.36 over (min) 2.00 16.00	
Storage Coeff. (min) = 1.64 (ii) 16.22 (ii)	
Unit Hyd. Tpeak (min) = 2.00 16.00 Unit Hyd. peak (cms) = .63 .07	
	TOTALS
PEAK FLOW (cms)= .00 .00 TIME TO PEAK (hrs)= 1.35 3.07 RUNOFF VOLUME (mm)= 59.00 33.08	.008 (iii) 3.000
RUNOFF VOLUME (mm) = 59.00 33.08 TOTAL RAINFALL (mm) = 59.60 59.60	42.151
TOTAL RAINFALL (mm) = 59.60 59.60 RUNOFF COEFFICIENT = .99 .55	59.600 .707
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:	
(1) ON PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL	
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.	
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.	

* Area 301

*				
CALIB STANDHYD	Area (ha)=	8.44	Conn.(%)= 25.00	
03:301 DT= 1.00				
Surface area (h.	IMPERVIOUS	PERVIOUS 3.38	(i)	
Surface Area (h. Dep. Storage (m. Average Slope (i. Length (i.	n) = .60	2.50		
Average Slope (E) = 4.90	6.40 35.00		
Mannings n	013	.250		
		15 15		
Max.eff.Inten.(mm/h: over (mi:	12.52	15.15 21.00 (ii) 21.48 (21.00		
Storage Coeff. (min Unit Hyd. Tpeak (min	11.70 ((ii) 21.48 (ii)	
Unit Hyd. Tpeak (mi: Unit Hyd. peak (cm:	12.00	21.00		
			TOTALS	
PEAK FLOW (cm: TIME TO PEAK (hr: RUNOFF VOLUME (m: TOTAL RAINFALL (m:	s) = .07 s) = 2.00	.13 3.12 33.98 59.60	.203 (iii) 3.050	
RUNOFF VOLUME (mi	s) = 2.00 n) = 58.99	33.98		
TOTAL RAINFALL (mm RUNOFF COEFFICIENT	n) = 59.60 = .99	59.60 .57	59.600 .675	
(i) CN PROCEDURE :	SELECTED FOR PER	RVIOUS LOSSES:		
$CN^* = 76.5$ (ii) TIME STEP (DT	SHOULD BE SMAI	LER OR EQUAL		
THAN THE STOR	AGE COEFFICIENT.			
(111) PEAK FLOW DOE:	S NOT INCLUDE BA	ASEFLOW IF ANY	•	
001:0116				
ROUTE RESERVOIR	Requested routi	ng time step	= 1.0 min.	
ROUTE RESERVOIR IN>03:(301) OUT<04:(POND)	OUTI	FOW STORAGE T	ABLE	
	OUTFLOW STOF (cms) (ha.	RAGE OUTF	LOW STORAGE	
	(cms) (ha.	m.) (c	ms) (ha.m.) 059 .3300E+00	
	.009 .6000E	3-01	065 .3900E+00 068 .4200E+00	
	.026 .1200E			
	.033 .1500E		073 .4800E+00	
	.043 .2100F	+00	075 .5100E+00 075 .5100E+00	
	.048 .2400E	+00 .	529 .5700E+00 000 .0000E+00	
	.052 .2700E	3+00 . 3+00 .	000 .0000E+00	
ROUTING RESULTS			EVA D II	
	AREA (ha) 8.44 8.44	(cms) (h	rs) (mm) 050 40.243	
INFLOW >03: (301 OUTFLOW<04: (POND OVERFLOW<**: (000001	8.44	.203 3.	050 40.243 650 40.242	
OVERFLOW<**: (000001	.00	.000	000 .000	
TOTAL	NUMBER OF STMIIT	ATED OVERETOR		
CUMUL	ATIVE TIME OF OV VTAGE OF TIME OV	ERFLOWS (hou	rs)= .00	
PERCEI	NTAGE OF TIME OV	ERFLOWING	(%) = .00	
PEAK	FLOW REDUCTI SHIFT OF PEAK FL	ON [Qout/Qin]	(%) = 24.613 (in) = 216.00	
MAXIM	JM STORAGE US	ED (ha.	m.)=.2580E+00	
001:0117				
*				
* Area 401 *				
CALIB NASHYD 05:401 DT= 2.00	Area (ha) =	13.38 Curv	e Number (CN)=72. Linear Res.(N)= 3.	.20
	U.H. Tp(hrs)=	.450	nameda Mess. (II) - 3.	
Unit Hyd Opeak (cm:				
DEAK FION (om-	s)= .163 (i)			
TIME TO PEAK (hr:	3)= 5.067			
RUNOFF VOLUME (mg	n) = 20.152			
RUNOFF COEFFICIENT	338			
PEAK FLOW (CM. TIME TO PEAK (hr: RUNOFF VOLUME (m) TOTAL RAINFALL (m) RUNOFF COEFFICIENT (i) PEAK FLOW DOES 1	OT INCLUDE BASE	FLOW IF ANY		
001:0118				
* * Area 501				
*				
CALIB STANDHYD	Area (ha)=	3.92		
06:501 DT= 1.00	Total Imp(%)=	65.00 Dir.	Conn.(%)= 35.00	

	IMPE	RVIOUS	PERVIOUS (i)	
Surface Area	(ha) = 2 (mm) = (%) = 4 (m) = 500	2.55	1.37		
Dep. Storage	(mm) =	. 60	6.40		
Length	(m) = 500	0.00	35.00		
Mannings n	-	.013	.250		
Max.eff.Inten	(mm/hr) = 13	2.52	14.99		
	er (min) 10	0.00	19.00		
Storage Coeff	. (min) =	9.56 (ii)	19.38 (i	i)	
Unit Hyd. Tpe Unit Hyd. pea	ak (min) = 10	0.00	19.00		
Unit Hyd. pea	k (cms)=	.12	.06		
DESK FLOM	()	0.5	0.5	*TOTALS	
TIME TO DEAK	(cms)=	2 00	.05 3.10	.099	(111)
RUNOFF VOLUME	(mm) = 55	9.00	33.84	42.649	
TOTAL RAINFAL	L (mm) = 59	9.60	59.60	59.600	
RUNOFF COEFFI	(cms) = (hrs) = 20 (mm) = 50 (mm) = 50 CIENT =	.99	.57	.716	
	EDURE SELECTED FO		r torere.		
CN* =	76.5 Ia = Dep.	. Storage	(Above)		
(ii) TIME ST	EP (DT) SHOULD BE	E SMALLER (OR EQUAL		
	E STORAGE COEFFIC				
(111) PEAK FL	OW DOES NOT INCLU	JDE BASEFL	OW IF ANY.		
:0119					
OUTE RESERVOIR	Requested	routing t	ime step =	1.0 min.	
IN>06: (501)	1				
UT<07: (POND)					
	OUTFLOW (cms)	STORAGE	OUTFL	OW STORAGE	<u>.</u>
	.000	.0000E+00	.0	74 .1200E+0	5
	.004	.1500E-01	1 .0	80 .1350E+0	0
	.005	.3000E-01	1 .0	86 .1500E+0	0
	.006	.4500E-01	1 .0:	92 .1650E+0	0
	.036	.6000E-01	1 .0:	98 .1800E+0)
	.048	.7500E=01	1 .3	25 .1950E+U)
	.066	.1050E+00	.0	TORAGI 8) (ha.m.) 74 1200E+01 80 1350E+01 86 1500E+01 92 1650E+01 98 1800E+01 25 1950E+01 30 0000E+01	5
ROUTING RESUL	TS ARI	EA QPE	AK TPE	AK R.V	
TNETON NO. 4	(ha	a) (cm:	s) (hr:	s) (mm) 17 42.64)
OUTFLOW<07: (POND) 3.9	92 .0	57 5.4	00 42.64	R
INFLOW >06: (OUTFLOW<07: (OVERFLOW<**: (501) 3.5 POND) 3.5 000001) .0	.00	AK TPE: 8) (hr: 99 3.0: 57 5.4	.00	
	TOTAL NUMBER OF				
	CUMULATIVE TIME	OF OVEREI	OVERFLOWS OWS (hour:	s)= .00	
	PERCENTAGE OF T	IME OVERFLA	DWING (b) = .00	
	DELL BLOW D	DENOMINAL (F7 700	
	PEAK FLOW RE	EAK FLOW ((mi)	0)= 143.00	
	TIME SHIFT OF PE	E USED	(ha.m	.)=.8876E-01	
.0110					

0 year - 12hr A	ES				
EAD STORM		·\SWMHYM~	1\LAKEST~1	\10AES12.stm	
total= 69.30 m	m Comments: 3	10 year AE	5 12hr	(10111011110111	
TIME	RAIN TIME	E RAIN	TIME	RAIN T	IME RAIN
hrs	mm/nr hrs	s mm/nr	1 nrs	mm/nr 1	nn nn
2.00	14.553 5.00	0 9.702	8.00	.693 11	.00
3.00	RAIN TIME mm/hr hrs 12.474 4.00 14.553 5.00 13.860 6.00	5.544	9.00	.000 12	.00 .000
:0121					

Area (ha)= .28 Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00 PERVIOUS (i)

.14 2.50 2.90 35.00 .250

IMPERVIOUS

.14 .60 2.90 42.00

(ha) = (mm) = (%) = (m) =

* Area 101

| CALIB STANDHYD | | 01:101 DT= 1.00 |

Surface Area Dep. Storage Average Slope Length Mannings n

Max.eff.Inten.(mm/h	nr) =	14.55	12.84	
over (mi	in)	2.00	16.00	
Storage Coeff. (mi	in) =	2.38 (ii)	15.63 (ii)	
Unit Hyd. Tpeak (mi	in) =	2.00	16.00	
Unit Hyd. peak (cr	ns) =	.50	.07	
				TOTALS
PEAK FLOW (cr	ns) =	.00	.00	.009 (iii)
TIME TO PEAK (h)	(s) =	2.00	3.05	3.000
RUNOFF VOLUME (#	nm) =	68.70	41.17	50.805
TOTAL RAINFALL (#	nm) =	69.30	69.30	69.300
RUNOFF COEFFICIENT	-	.99	.59	.733
RUNOFF COEFFICIENT	-	.99	.59	.733

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: ${\rm CN^{\star}=~82.0~Ia=Dep.~Storage~(Above)}$

(ii) TIME STEP	(DT) SHOU STORAGE CO		LER OR	EQUAI			
(iii) PEAK FLOW				IF AN	Y.		
001:0122							
* * Area 201							
* Area ZUI							
CALIB STANDHYD							
02:201 DT= 1.00		Imp (%) =	50.00	Dir	. Conn	. (%) =	35.00
		IMPERVIOUS	S PEI	RVIOUS	(i)		
Surface Area Dep. Storage	(ha) =	.16		.16			
Dep. Storage	(mm) =	.60		2.50			
				2.80			
Length Mannings n	(m) =	20.00		.250			
wannings n	-	.013		.250			
Max.eff.Inten.(nm/hr)=	14.55		12.85			
over	(min)	2.00		15.00			
Max.eff.Inten.() over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(min) =	1.54	(ii)	14.92	(ii)		
Unit Hyd. Tpeak Unit Hyd. peak	(min) =	2.00		15.00			
onic nya. peak	(Cilis) -	.05		.00		*TOTAL	S.*
PEAK FLOW	(cms) =	.00		.01		.01	0 (iii)
PEAK FLOW TIME TO PEAK	(hrs) =	2.00		3.05		3.00	
RUNOFF VOLUME		68.70		41.17		50.80	
TOTAL RAINFALL RUNOFF COEFFICI		69.30		69.30 .59		69.30	
KUNUFF CUEFFICI	ENI -	.99		.59		. / 3	3
(i) CN PROCED	URE SELECT	ED FOR PER	RVIOUS I	LOSSES	:		
CN* = 82							
(ii) TIME STEP				EQUAI			
THAN THE (iii) PEAK FLOW				TE AN	rv		
(III) PARK PLOW	DOES NOT	INCLUDE B	TOPETON	IF AD			
001:0123							
*							
* Area 301							
CALIB STANDHYD							
03:301 DT= 1.00		Imp (%) =	60.00	Dir	. Conn	. (%) =	25.00
		TMDDDIITOII					
Surface Area		IMPERVIOUS		RVIOUS 3.38	(1)		
Den Storage	(mm) =	60		2 50			
Average Slope	(%) −	4.90 700.00		6.40			
Length	(m) =	700.00		35.00			

- Mannings n = .013 .250 Max.eff.Inten. (mm/hr) = over (min)
 Storage Coeff. (min) = Unit Hyd. Tpeak (min) = Unit Hyd. peak (cms) = 14.55 18.74 11.00 20.00 11.02 (ii) 20.00 (ii) 11.00 20.00 .10 .06 *TOTALS*
 .248 (iii)
 3.033
 48.792
 69.300
 .704 PEAK FLOW (cms) = TIME TO PEAK (hrs) = RUNOFF VOLUME (mm) = TOTAL RAINFALL (mm) = RUNOFF COEFFICIENT = .09 2.00 68.69 69.30 .17 3.08 42.15 69.30 .61

| ROUTE RESERVOIR | | IN>03:(301) | | OUT<04:(POND) | Requested routing time step = 1.0 min.OUTFLOW STORAGE TABLE OUTFLOW STORAGE (Cms) (ha.m.) (cms) (ha.m.)

```
.000 .0000E+00
.007 .3000E-01
.009 .6000E-01
.011 .9000E-01
                                                                                                                                                                .059 .3300E+00
.062 .3600E+00
.065 .3900E+00
.068 .4200E+00
                                                                                      .011 .9000E-01
.026 .1200E+00
.033 .1500E+00
.039 .1800E+00
.043 .2100E+00
.048 .2400E+00
.052 .2700E+00
.055 .3000E+00
                                                                                                                                                              .070 .4500E+00
.073 .4800E+00
.075 .5100E+00
.077 .5400E+00
.529 .5700E+00
                                                                                                                                                                .000 .0000E+00
                                                                                                                                                                                      R.V.
(mm)
48.792
48.790
.000
              ROUTING RESULTS
                                                                                                 AREA QPEAK
                                                                                                                                                             TPEAK
                                                                                                (ha)
8.44
8.44
                                                                                                                        (cms)
.248
.057
           INFLOW >03: (301 )
OUTFLOW<04: (POND )
OVERFLOW<**: (000001)
                                                                                                                                                               .000
                                                            TOTAL NUMBER OF SIMULATED OVERFLOWS =
                                                          CUMULATIVE TIME OF OVERFLOWS (hours) = PERCENTAGE OF TIME OVERFLOWING (%) =
                                                          PEAK FLOW REDUCTION [Qout/Qin](%) = 22.966
TIME SHIFT OF PEAK FLOW (min) = 218.00
                                                           TIME SHIFT OF PEAK FLOW (min) = 218.00 MAXIMUM STORAGE USED (ha.m.) = .3159E+00
001:0125-----
 * Area 401
 | CALIB NASHYD | Area (ha) = 13.38 Curve Number (CN) = 72.20 | 05:401 DT = 2.00 | Ia (mm) = 4.000 | of Linear Res.(N) = 3.00 | 0.11 | 0.12 | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0
             Unit Hyd Qpeak (cms) = 1.136
            PEAK FLOW (cms) = .211 (i)
TIME TO PEAK (hrs) = 3.267
RINOFF VOLUME (mm) = 26.144
TOTAL RAINFALL (mm) = 69.300
RUNOFF COEFFICIENT = .377
              (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0126-----
 * Area 501
   | CALIB STANDHYD | Area (ha)= 3.92
| 06:501 DT=1.00 | Total Imp(%)= 65.00 Dir. Conn.(%)= 35.00
                                                                             IMPERVIOUS PERVIOUS (i)
            Surface Area (ha) =
Dep. Storage (mm) =
Average Slope (%) =
Length (m) =
Mannings n =
                                                                                                                                      1.37
2.50
6.40
35.00
.250
                                                                                                     .013
                                                                                                   14.55 18.54

9.00 18.00

9.00 (ii) 18.02 (ii)

9.00 18.00

.13 .06
              Max.eff.Inten.(mm/hr)=
              over (min)
Storage Coeff. (min)=
Unit Hyd. Tpeak (min)=
Unit Hyd. peak (cms)=
                                                                                                                                                                                    *TOTALS*
.120 (iii)
3.017
51.340
69.300
.741
             PEAK FLOW (cms) = .06
TIME TO PEAK (hrs) = 2.00
RUNOFF VOLUME (mm) = 68.70
TOTAL RAINFALL (mm) = 69.30
RUNOFF COEFFICIENT = .99
             001:0127-----
    ROUTE RESERVOIR
IN>06:(501 )
OUT<07:(POND )
                                                                            Requested routing time step = 1.0 min.
                                                                                                                                           OUTFLOW STORAGE
                                                                             OUTFLOW STORAGE
                                                                                  (cms) (ha.m.)

.000 .0000E+00

.004 .1500E-01

.005 .3000E-01

.006 .4500E-01

.036 .6000E-01
                                                                                                                                                         (cms) (ha.m.)

.074 .1200E+00

.080 .1350E+00

.086 .1500E+00

.092 .1650E+00

.098 .1800E+00
```

	.048 .7500 .058 .9000 .066 .1050)E-01)E-01)E+00	.325 .735 .000	.1950E+00 .2100E+00 .0000E+00	
ROUTING RESULTS	AREA (ha) 3.92 3.92 .00	QPEAK	TPEAK	R.V.	
TNETOW >06. (501)	(ha)	(cms)	(hrs)	(mm) 51.340	
<pre>INFLOW >06: (501) OUTFLOW<07: (POND) OVERFLOW<**: (000001)</pre>	3.92	.067	5.400	51.338	
OVERFLOW<**: (000001)	.00	.000	.000	.000	
TOTAL NU	MBER OF SIMU	JLATED OVE	RFLOWS =	0	
CUMULATI	/E TIME OF O	VERFLOWS	(hours) =	.00	
PERCENTA(GE OF TIME (OVERFLOWING	G (%)=	.00	
PEAK F	OW REDUCT	TION [Qout,	/Qin](%)=	55.534	
MAXIMUM	STORAGE U	JSED	(ha.m.)=.	1056E+00	
001:0128					
*					
*					

*					
* * 25 year - 12hr AES					
*					
READ STORM File Ptotal= 81.30 mm Com	ename: C:\SW ments: 25 ve	vMHYM~1\LAI ear AES 121	KEST~1∖25A hr	ES12.stm	
TIME RAIN hrs mm/hr 1.00 14.634 2.00 17.073 3.00 16.260	TIME	RAIN '	TIME RA	IN TIME	RAIN
nrs mm/nr 1.00 14.634	nrs :	nm/nr 2.195 '	nrs mm/ 7.00 2.4	nr nrs	mm/nr
2.00 17.073	5.00 11	1.382 1	8.00 .8	13 11.00	.000
3.00 16.260	6.00	5.504	9.00 .0	00 12.00	.000
001:0129					
*					
* Area 101					
*					
CALIB STANDHYD	(1-1-	20			
CALIB STANDHYD Are	a (na)=	50.00	Dir. Conn	. (%) = 35.00	1
			IOUS (i)		
Dep. Storage (mm)=	.60	2	.14		
Surface Area (ha) =	.14 .60 2.90 42.00	2	.90		
Length (m) = Mannings n =	42.00 .013	35	.00 250		
mannings n =					
Max.eff.Inten.(mm/hr) = over (min) Storage Coeff. (min) = Unit Hyd. Tpeak (min) = Unit Hyd. peak (cms) =	17.07	16	.00		
over (min) = Storage Coeff. (min) =	2.00	(ii) 14	.00 .36 (ii)		
Unit Hyd. Tpeak (min) =	2.00	14	.00		
Unit Hyd. peak (cms)=	.52		.08		
				TOTALS	
TIME TO PEAK (hrs)=	1.85	3	.03	.010 (ii: 3.000	.,
RUNOFF VOLUME (mm) = TOTAL RAINFALL (mm) = RUNOFF COEFFICIENT =	80.70	51	.53	61.741 81.300	
TOTAL RAINFALL (mm) = RUNOFF COEFFICIENT =	81.30	81	. 63	81.300 .759	
(i) CN PROCEDURE SELI CN* = 82.0 I (ii) TIME STEP (DT) SI	CTED FOR PE	ERVIOUS LO	SSES:		
(ii) TIME STEP (DT) SI	OULD BE SMA	ALLER OR E	QUAL		
THAN THE STORAGE	COEFFICIENT	Ρ.			
(iii) PEAK FLOW DOES NO	OT INCLUDE I	BASEFLOW II	F ANY.		
001:0130					
* * Area 201					
*					
CALIB STANDHYD Are 02:201 DT= 1.00 Tot	a (na)=	50.00	Dir. Conn	. (%) = 35.00	1
					•
Surface Area (ha) = Dep. Storage (mm) = Average Slope (%) = Length (m) = Mannings n	IMPERVIOU	JS PERV	IOUS (i)		
Surrace Area (na) =	.16	2	.16 .50		
Average Slope (%)=	2.80	2	.80		
Length (m) =	20.00	35	.00		
Mannings n =			250		
Max.eff.Inten.(mm/hr)=	17.07	16 14 (ii) 13	.00		
over (min) Storage Coeff. (min)=	1.00	14	.00		
Storage Coeff. (min) = Unit Hvd. Tpeak (min) =	1.45	(11) 13	.70 (11)		
Unit Hyd. Tpeak (min) = Unit Hyd. peak (cms) =	.85		.08		

049 7500F-01 | 325 1950F+00

				TOTALS
PEAK FLOW	(cms) =	.01	.01	.012 (iii)
TIME TO PEAK	(hrs) =	1.78	3.03	3.000
RUNOFF VOLUME	(mm) =	80.70	51.53	61.741
TOTAL RAINFALL	(mm) =	81.30	81.30	81.300
RUNOFF COEFFICI	ENT -	.99	. 63	.759

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 82.0 Ia = Dep. Storage (Above)

 (ii) TIME STEP (CT) SHOULD BE SMALLER OR EQUAL

 THAN THE STORAGE COEFFICIENT.

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

00	1:0131								
* ; *	Area 301								
		-							
В	CALIB STANDHYD 03:301 DT= 1.00	Area Total	(ha)= Imp(%)=	8 60	.44 .00 Di:	. Conr	1. (%)=	25.00	
		-							
			IMPERVIOL	IS	PERVIOU:	S (i)			
	Surface Area	(ha) =	5.06		3.38				
	Dep. Storage	(mm) =	.60		2.50				
	Average Slope	(%) −	4.90		6.40				
	Length	(m) =	700.00		35.00				
	Mannings n	-	.013		.250				
	Max.eff.Inten.(m	nm/hr)=	17.07		23.29				
	over	(min)	10.00		19.00				
	Storage Coeff.	(min) =	10.34	(ii)	18.57	(ii)			
	Unit Hyd. Tpeak	(min) =	10.00		19.00				
	Unit Hyd. peak	(cms) =	.11		.06				
							TOTAL	s	
	PEAK FLOW	(cms) =	.10		.21		.30	4 (iii)	
	TIME TO PEAK	(hrs) =	2.00		3.07		3.01	7	
	RUNOFF VOLUME	(mm) =	80.69		52.59		59.62	2	
	TOTAL RAINFALL	(mm) -	81.30		81.30		81.30	0	
	RUNOFF COEFFICIE	NT -	.99		. 65		.73	3	

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 76.5 Ia = Dep. Storage (Above)
 (ii) THMS STEP (0T) SHOULD BE SMALLER OR EQUAL

 THAN THE STORAGE COEFFICIENT
 (iii) DEPA FLOW DOES NOT INCLUDE BASSEFOM IF ANY

(iii) PEAK FLOW DOES NOT	INCLUDE BASEFI	OW IF ANY.	
001:0132			
ROUTE RESERVOIR Requ IN>03:(301)	_		
OUT<04: (POND)	OUTLFOW	STORAGE TABLE	
OUTF	LOW STORAGE ms) (ha.m.)	OUTFLOW	STORAGE
(c	ms) (ha.m.)	(cms)	(ha.m.)
	000 .0000E+00	.059	.3300E+00
	007 .3000E-01	1 .062	.3600E+00
	009 .6000E-01	.065	.3900E+00
	011 .9000E-01	.068	.4200E+00
	026 .1200E+00	.070	.4200E+00 .4500E+00
	033 .1500E+00	1 .073	.4800E+00 .5100E+00
	039 .1800E+00	1 .075	5100E+00
	043 .2100E+00	077	5400E+00
	040 24005+00	529	.5400E+00 .5700E+00
	052 .2700E+00 055 .3000E+00	.000	0000E+00
	055 3000E+00	.000	.0000E+00
•			
POURTING PESSITES	apra opi	rak TDFAK	R.V.
ROUTING RESULTS	(ha) (cr	ns) (hrs)	(mm)
INFLOW >03 - (301)	8 44	3.04 3.017	59 622
INFLOW >03: (301) OUTFLOW<04: (POND)	8 44	165 6 700	59 621
OVERFLOW<**: (000001)	0.44	000 0.700	000
OVERFLOW . (000001)	.00	.000	.000
TOTAL NUMB	ER OF SIMULATED	OVERETORS =	0
DEDCENTAGE	TIME OF OVERFI	OWING (%)=	.00
PERCENTAGE	OF TIME OVERE	JONING (%)-	.00
DEAN DIO	W REDUCTION		21 204
	OF PEAK FLOW		
IIND SHIFI	TORAGE USED	(11111) -	200000.00
MAXIMUM S	TURAGE USED	(na.m.)=	.3906E+00
0.01:0133			
001:0133			
* Area 401			
^			
CALIB NASHYD Area	(na)= 13.	.38 Curve Nu	mper (CN) = /2.20
05:401 DT= 2.00 Ia			ear Res.(N) = 3.00
U.H.	rp(nrs)= .	100	

Unit Hyd Qpeak (cms) = 1.136

PEAK FLOW (cms) = .277 (i)
TIME TO PEAK (hrs) = 3.233
RINNOFF VOLUME (mm) = 34.125
TOTAL RAINFALL (mm) = 81.300
RUNOFF COEFFICIENT = .420

001:0134					
* Area 501					
CALIB STANDH	YD Area	(ha)=	3.92		
06:501 DT	= 1.00 Tota	1 Imp(%)=	65.00 Dir.	Conn.(%)= 35.00	
		IMPERVIOUS	PERVIOUS		
Surface A	rea (ha)=	0.55	1.37	(1)	
Dep. Store	rea (ha) = age (mm) = lope (%) =	.60	2.50 6.40		
Average S. Length	lope (%)=	.60 4.90 500.00	6.40 35.00		
Mannings :	(m) =	.013	.250		
Max.eII.II	nten. (mm/hr) =	17.07	23.04		
Storage C	over (min) ceff. (min)=	8.45 (i	i) 16.71 (:	ii)	
Unit Hyd.	Tpeak (min) = peak (cms) =	8.00	17.00 i) 16.71 (: 17.00 .07		
onic nyu.	peak (cms)-			*TOTALS*	
PEAK FLOW		.07	.08	146 (111)	
TIME TO PE	EAK (hrs)=	.07 2.00 80.70	3.05 52.41	3.000 62.313	
TOTAL RAIL	NFALL (mm) =	81.30	81.30	81.300	
RUNOFF CO	EFFICIENT =	.99	.64	.766	
(i) CN	PROCEDURE SELEC	TED FOR PERV	IOUS LOSSES:		
CN*	PROCEDURE SELEC = 76.5 Ia E STEP (DT) SHO	= Dep. Stora	ge (Above)		
(ii) TIM	E STEP (DT) SHO N THE STORAGE C	OLD BE SMALL	EK OR EQUAL		
	K FLOW DOES NOT		EFLOW IF ANY		
01:0135					
ROUTE RESERV	DIR Requ	ested routin	q time step :	- 1.0 min.	
IN>06: (501 OUT<07: (POND)		-		
OUT<07: (POND)				
	OHTE	TOM STORE	OW STORAGE TO	ABLE	
	OUTF	LOW STORA ms) (ha.m	GE OUTF	LOW STORAGE	
	OUTF	LOW STORA ms) (ha.m	GE OUTF	LOW STORAGE	
	OUTF (c	TLOW STORA (ms) (ha.m 000 .0000E+	GE OUTF:	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00	
	OUTF (c	"LOW STORA (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E-	GE OUTF: .) (cr 00 .0 01 .0	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00	
	OUTF (c	CLOW STORA (ms) (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E-	GE OUTF: .) (cr 00 .1 01 .1 01 .1	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00 092 .1650E+00	
	OUTF (d	TLOW STORA (ha.m) (ha.m) 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E- 036 .6000E- 048 .7500E- 058 .9000E-	GE OUTF: .) (cr 00 .0 01 .0 01 .0 01 .0 01 .0 01 .0	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00 092 .1650E+00 098 .1800E+00 0325 .1950E+00	
	OUTF (d	TLOW STORA (ms) (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E- 036 .6000E- 048 .7500E-	GE OUTF: .) (cr 00 .0 01 .0 01 .0 01 .0 01 .0 01 .0	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00 092 .1650E+00	
ROUTING RE	CUTF	TLOW STORA (ms) (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E- 036 .6000E- 048 .7500E- 058 .9000E- 066 .1050E+	GE OUTF: .) (c: 000 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 .	LOW STORAGE ms) (ha.m.) 074 .1200E+00 080 .1350E+00 086 .1500E+00 092 .1650E+00 098 .1800E+00 0325 .1950E+00	
ROUTING R	OUTF (c	TLOW STORA (ms) (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E- 036 .6000E- 048 .7500E- 058 .9000E- 066 .1050E+	GE OUTF: .) (c: 000 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 .	LOW STORAGE ms) (ha.m.) 774 .1200E+00 180 .1350E+00 186 .150E+00 1992 .1650E+00 1998 .1800E+00 225 .1950E+00 000 .0000E+00 2AK R.V.	
ROUTING R	OUTF (c	TLOW STORA (ms) (ha.m 000 .0000E+ 004 .1500E- 005 .3000E- 006 .4500E- 036 .6000E- 048 .7500E- 058 .9000E- 066 .1050E+	GE OUTF: .) (c: 000 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 . 011 .	LOW STORAGE ms) (ha.m.) 774 .1200E+00 180 .1350E+00 186 .150E+00 1992 .1650E+00 1998 .1800E+00 225 .1950E+00 000 .0000E+00 2AK R.V.	
ROUTING RI	OUTF (c	NLOW STORA (ha.ms) (ha.ms) 000 .0000+ 0000 .0000+ 0005 .3000+ 006 .4500+ 036 .6000+ 036 .6000+ 036 .7500+ AREA (ha) 3.92 3.92	GE OUTF:	DOW STORAGE ms) (ha.m.) 174 .1200E+00 180 .1350E+00 186 .1500E+00 186 .1500E+00 198 .1800E+00 1998 .1800E+00 1935 .2100E+00 100 .0000E+00 EAK R.V. cm) 000 62.313 117 62.312	
ROUTING RI	OUTF (c	NILOW STORA (ha.m on	GE OUTF	LOW STORAGE ms (ha.m.) 774 .1200E+00 806 .1350E+00 8166 .1500E+00 9198 .1800E+00 9198 .1800E+00 0000E+00	
ROUTING RI	ESULTS ESULTS 6: (501) 7: (POND) *: (000001)	NAME OF SIMULA STORA (ha.ms) (ha.m 000 .0000E+ 004 .1500E- 006 .4500E- 036 .600E- 036 .600E- 048 .7500E- 066 .1050E+ AREA (ha) 3.92 3.92 .00	GE OUTF	STORAGE ms) (ha.m.) 30 (ha.m.) 3174 1200E+00 386 1350E+00 386 1500E+00 386 1500E+00 398 1800E+00 398 1800E+00 399 21650E+00 3735 22100E+00 00000E+00 0000E+00 0000E+000 0000E+	
ROUTING RI	ESULTS ESULTS 1. (FOND) 1. (FOND) 1. (FOND)	NILOW STORA (ha.ms) (ha.m) (000 .0000± (004 .15002± (005 .30002± (006 .45002± (006 .75002± (006 .10502± (006	GE OUTF	LOW STORAGE ms (ha.m.) 774 .1200E+00 800 .1350E+00 8160 .1500E+00 9186 .1500E+00 9192 .1650E+00 9192 .1650E+00 0193 .1200E+00 0193 .1200E+00 0.0000E+00	
ROUTING RI	ESULTS ESULTS 1. (FOND) 1. (FOND) 1. (FOND)	NAME OF SIMULA STORA (ha.ms) (ha.m 000 .0000E+ 004 .1500E- 006 .4500E- 036 .600E- 036 .600E- 048 .7500E- 066 .1050E+ AREA (ha) 3.92 3.92 .00	GE OUTF	LOW STORAGE ms (ha.m.) 774 .1200E+00 800 .1350E+00 8160 .1500E+00 9186 .1500E+00 9192 .1650E+00 9192 .1650E+00 0193 .1200E+00 0193 .1200E+00 0.0000E+00	
ROUTING RI	ESULTS 6: (501) 7: (POND) *: (000001) TOTAL NUMB CUMULATIVE PERCENTAGE	STORA	GE OUTF	LOW STORAGE ms (ha.m.) 174 .1200E+00 186 .1500E+00 186 .15	
ROUTING RI	ESULTS 6: (501) 7: (POND) *: (000001) TOTAL NUMB CUMULATIVE PERCENTAGE	STORA	GE OUTF	LOW STORAGE ms (ha.m.) 174 .1200E+00 186 .1500E+00 186 .15	
ROUTING RI	ESULTS 6: (501) 7: (POND) *: (000001) TOTAL NUMB CUMULATIVE PERCENTAGE	STORA	GE OUTF	LOW STORAGE ms (ha.m.) 774 .1200E+00 800 .1350E+00 8160 .1500E+00 9186 .1500E+00 9192 .1650E+00 9192 .1650E+00 0193 .1200E+00 0193 .1200E+00 0.0000E+00	
ROUTING RI	OUTF (cc	STORA	GE OUTF	LOW STORAGE ms (ha.m.) 174 .1200E+00 186 .1500E+00 186 .15	
ROUTING RI INFLOW >0 OFFICE OFFI OVERFLOW:	ESULTS 6: (501) F: (80ND) TOTAL NUME CUMLIATIVE PERCENTIAGE PERM FLO TIME SHIFT MAXIMUM S	STORA	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 174 .1200E+00 174 .1200E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1200E+00 175 .12	
ROUTING RI INFLOW >0 OFFICE OFFI OVERFLOW:	ESULTS 6: (501) F: (80ND) TOTAL NUME CUMLIATIVE PERCENTIAGE PERM FLO TIME SHIFT MAXIMUM S	STORA	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 174 .1200E+00 186 .1500E+00 186 .15	
ROUTING RU	ESULTS 6: (501) 7: (FOND) 7: (FOND) 7: (FOND) TOTAL NUMB CUMILATIVE PERCENTAGE PEAR FLC TIME SHIFT MAXIMUM S	STORA	GE OUTFIGE O	LOW STORAGE ms (ha.m.) 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 775 1200	
ROUTING RI INFLOW >0. OUTFLOW<0' OVERFLOW<0'	ESULTS 6: (501) 7: (POND) TOTAL NUMB CUMULATIVE PERCENTAGE PEAK FLO TIME SHIFF MAXIMUM S	No.	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 174 .1200E+00 174 .1200E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1500E+00 175 .1200E+00 175 .12	****
ROUTING RI INFLOW >0. OUTFLOW<0' OVERFLOW<0'	ESULTS 6: (501) 7: (POND) TOTAL NUMB CUMULATIVE PERCENTAGE PEAK FLO TIME SHIFF MAXIMUM S	No.	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 1746 .1200E+00 1746 .1200E+0	****
ROUTING RI INPLOW >0 OUTFLOW<0 OVERFLOW<0	ESULTS 6: (501) 7: (FOND) 7: (FOND) 7: (FOND) TOTAL NUMB CUMULATIVE PERCENTAGE PERCHAGE MAXIMUM S	No.	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 1746 .1200E+00 1746 .1200E+0	****
ROUTING RI INPLOW >0 OUTFLOW<0 OVERFLOW<0	ESULTS 6: (501) 7: (FOND) 7: (FOND) 7: (FOND) TOTAL NUMB CUMULATIVE PERCENTAGE PERCHAGE MAXIMUM S	No.	GE OUTFIGE OUTFIGE	LOW STORAGE ms (ha.m.) 1746 .1200E+00 1746 .1200E+0	****
ROUTING RI INPLOW >0 OUTFLOW(-) OVERFLOW(-) OVERFLOW(-) 01:0136	ESULTS 6: (501) 7: (POND) 7: (000001) TOTAL NUMB CUMULATIVE PERCENTAGE PEAR FLC TIME SHIFT MAXIMUM S	LOW STORA (ma) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.	GE OUTF:	LOW STORAGE ms (ha.m.) 174 1200E+00 174 1200E+00 174 1200E+00 175 1200	****
ROUTING READ STORM PLOTAL 90.	ESULTS 6: (501) 7: (POND) 7: (POND) 7: (000001) TOTAL NUMB CUMILATIVE PERCENTAGE PEAR FLC TIME SHIFT MAXIMUM S	LOW STORA (ma) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.m) (ha.	GE OUTF:	LOW STORAGE ms (ha.m.) 1746 .1200E+00 1746 .1200E+0	****
ROUTING RI INPLOW >0. OUTFLOW<0' OVERFLOW<0' 101:0136 50 year - 12 READ STORM READ STORM	ESULTS 6: (501) 7: (FOND) 7: (FOND) 1: (OODOOL NUMBE CUMULLATIVE FERCENTAGE PEAK FLC TIME SHIFT MAXIMUM S	LOW STORA (ha.m.) (GE OUTFIGE O	LOW STORAGE ms (ha.m.) 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 775 1200	****
ROUTING RI INPLOW >0. OUTFLOW<0' OVERFLOW<0' 101:0136 50 year - 12 READ STORM READ STORM	ESULTS 6: (501) 7: (FOND) 7: (FOND) 1: (OODOOL NUMBE CUMULLATIVE FERCENTAGE PEAK FLC TIME SHIFT MAXIMUM S	LOW STORA (ha.m.) (GE OUTFIGE O	LOW STORAGE ms (ha.m.) 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 775 1200	****
ROUTING RI INPLOW >0. OUTFLOW<0' OVERFLOW<0' 50 year - 12! READ STORM PEOLAL = 90.	ESULTS 6: (501) 7: (FOND) 7: (FOND) 1: (OODOOL NUMBE CUMULLATIVE FERCENTAGE PEAK FLC TIME SHIFT MAXIMUM S	LOW STORA (ha.m.) (GE OUTFIGE O	LOW STORAGE ms (ha.m.) 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 774 1200E+00 775 1200	****
ROUTING RI INPLOW >0. OUTFLOW<0' OVERFLOW<0' 101:0136 50 year - 12 READ STORM READ STORM	ESULTS 6: (501) 7: (FOND) 7: (FOND) 1: (OODOOL NUMBE CUMULLATIVE FERCENTAGE PEAK FLC TIME SHIFT MAXIMUM S	LOW STORA (ha.m.) (GE OUTFIGE O	LOW STORAGE ms (ha.m.) 174 1200E+00 174 1200E+00 174 1200E+00 175 1200	****

001:0137				
* * * Area 101				
CALIB STANDHYD 01:101 DT= 1.00	Area	(ha)= Tmn(%)= 5	.28 0.00 Dir. Con	n. (%) = 35.00
				(0)- 33.00
Surface Area	(ha) =	IMPERVIOUS	PERVIOUS (i)	
Dep. Storage	(mm) =	.14	.14 2.50	
Average Slope	(%) =	2.90 42.00	2.90	
Surface Area Dep. Storage Average Slope Length Mannings n	(m) =	.013	35.00 .250	
Max.eff.Inten.(18.98	18.41 14.00) 13.61 (ii) 14.00	
over	(min)	2.00	14.00	
Storage Coeff. Unit Hyd. Tpeak	(min) =	2.14 (11	14.00	
Unit Hyd. peak	(cms) =	.53	.08	
PEAK FLOW	(cms) =	.01	0.1	*TOTALS*
TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	(hrs)=	1.42 89.80	.01 3.03 59.59 90.40	.012 (iii) 3.000
RUNOFF VOLUME	(mm) =	89.80	59.59	70.164
RUNOFF COEFFICI	(mm) = ENT =	90.40	.66	90.400
(iii) PEAK FLOW	STORAGE CO DOES NOT	DEFFICIENT. INCLUDE BASE		
001:0138				
* * Area 201				
*				
CALIB STANDHYD 02:201 DT= 1.00	Area Total	(ha)= L Imp(%)= 5	.32 0.00 Dir. Con	n.(%)= 35.00
		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha) =	.16 .60	.16 2.50	
Average Slope	(mm) = (%) =	2.80	2.80	
Surface Area Dep. Storage Average Slope Length Mannings n	(m) -	2.80 20.00 .013	35.00 .250	
over over	(min)	1.00	13.00	
Max.eff.Inten.(over Storage Coeff.	(min) =	1.39 (ii) 12.97 (ii)	
Unit Hyd. Tpeak Unit Hyd. peak	(min) =	1.00	13.00	
				TOTALS
PEAK FLOW	(cms) =	.01	.01 3.03 59.59	.014 (iii) 3.000
TIME TO PEAK	(hrs) =	1.28	3.03	3.000 70.164
PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL BUNOFF COFFECTI	(mm) =	.01 1.28 89.80 90.40	90.40	90.400
RUNOFF COEFFICI	ENT -	.99	.66	.776
(i) CN PROCEDI CN* = 82 (ii) TIME STEP THAN THE: (iii) PEAK FLOW	.0 Ia * (DT) SHOU STORAGE CO	Dep. Storag JLD BE SMALLE DEFFICIENT.	e (Above) R OR EQUAL	
001:0139				
* Area 301				
CALIB STANDHYD 03:301 DT= 1.00	Area Total			n.(%)= 25.00
Z	()>-	IMPERVIOUS	PERVIOUS (i)	
Dep. Storage	(mm) =	5.06	3.38 2.50	
Surface Area Dep. Storage Average Slope Length	(%) =	.60 4.90	6.40	
Length Mannings n	(m) =	4.90 700.00 .013	35.00 .250	
Max.eff.Inten.(nm/hr)=			
		18.98 10.00 9.91 (ii	26.79 18.00	
		9.91 (ii) 17.69 (ii)	
Unit Hyd. Tpeak Unit Hyd. peak	(min) =	10.00	18.00	
onic myd. peak	(CIIIS) =			*TOTALS*
PEAK FLOW	(cms) =	.11	.24	.348 (iii) 3.017
PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL	(hrs) =	.11 2.00 89.79 90.40	.24 3.05 60.69	3.017 67.978
RUNOFF VOLUME TOTAL RAINFALL	(mm) =	90.40	90.40	90.400

RUNOFF COEFFICIENT = .99 .67 .752

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 76.5 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SHALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

THAN T (iii) PEAK F						
001:0140						
ROUTE RESERVOIR	Requ	ested rou	ting tim	ne step =	1.0 min.	
IN>03: (301) OUT<04: (POND)	!	011				
OUT <u4:(pond)<="" td=""><td> OUTF</td><td>LOW ST</td><td>TLFOW ST</td><td>ORAGE TAB</td><td>W STORAGE</td><td></td></u4:(pond>	OUTF	LOW ST	TLFOW ST	ORAGE TAB	W STORAGE	
	(c					
		000 .000				
			0E-01 0E-01	1 .06	2 .3600E+00	
		011 .900	0E-01	1 .06	3300E+00 23600E+00 53900E+00 84200E+00 04500E+00 34800E+00 5100E+00	
		026 .120	0E-01 0E+00	1 .07	0 .4500E+00	
		033 .150	0E+00	.07	3 .4800E+00	
		043 .210	0E+00 0E+00			
		048 2401	0E+00		9 .5700E+00 0 .0000E+00	
		052 .270	0E+00	1 .00	0 .0000E+00	
		055 .300	0E+00	.00	0 .0000E+00	
ROUTING RESU		AREA	QPEAK	TPEA	K R.V.	
		(ha) 8.44	(cms)	TPEA (hrs	(mm)	
INFLOW >03: OUTFLOW<04:	(DOND)	8.44	.348	3.01	7 67.978 3 67.977	
OVERFLOW<**:	(000001)	.00	.000	.00	0 .000	
	TOTAL NUMB	ER OF SIM	ULATED C	VERFLOWS	- 0	
	CUMULATIVE PERCENTAGE	OF TIME (OVERFLOW	ING (%) = .00	
	PEAK FLO	w prnnc	TION [Oc	ust/Oinl/S	1= 20 192	
		OF PEAK	FLOW	(min) = 20.192) = 223.00	
	MAXIMUM S	TORAGE I	FLOW USED	(ha.m.) = .4496E+00	
001:0141 * * Area 401						
001:0141 * * Area 401						
001:0141 * Area 401 * CALIB NASHYD 05:401 DT= 2	Area	(ha) = (mm) = Tp(hrs) =				
001:0141 * Area 401 * CALIB NASHYD 05:401 DT= 2 Unit Hyd Ope	Area .00 Ia U.H.	(ha)= (mm)= Tp(hrs)=	13.38 4.000 .450			
001:0141 * Area 401 * CALIB NASHYD 05:401 DT= 2 Unit Hyd Qpe	.00 Ta .00 Ta .01 Ta .02 Ta	(ha)= (mm)= Tp(hrs)=	13.38 4.000 .450			
001:0141 * Area 401 * CALIB NASHYD 05:401 DT= 2 Unit Hyd Qpe	.00 Ta .00 Ta .01 Ta .02 Ta	(ha)= (mm)= Tp(hrs)= 1.136	13.38 4.000 .450			
001:0141	Area OO Ia U.H. ak (cms) = (cms) = (hrs) = E (mm) =	(ha) = (mm) = Tp (hrs) = 1.136 .330 (: 3.233 40.526 90.400	13.38 4.000 .450			
001:0141 * Area 401 * CALIB NASHYD 05:401 DT= 2 Unit Hyd Qpe	Area OO Ia U.H. ak (cms) = (cms) = (hrs) = E (mm) =	(ha)= (mm)= Tp(hrs)= 1.136	13.38 4.000 .450			
001:0141	Area .00 Ia .00 U.H. ak (cms) =	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448	13.38 4.000 .450	3 Curve) # of L		
001:0141	Area .00 Ia .00 U.H. ak (cms) =	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448	13.38 4.000 .450 i)	Curve # of L	Number (CN)-72 inear Res.(N)- 3	.20
001:0141	Area .00 Ia U.H. ak (cms) =	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448	13.38 4.000 .450	Curve # of L	Number (CN)=72	.20
00:0141 * Area 401 * Area 401 CALIB NASHYD 05:401 DT- 2 Unit Hyd Qpe PERK FLOW TIME TO PERK RUNOFF VOLUME TOTAL RAINFA. RUNOFF COEFF (1) PEAK FLO 001:0142	Area .00 Ia .00 U.H. ak (cms) =	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448	13.38 4.000 .450	Curve # of L	Number (CN)=72	.20
001:0141	Area .00 Ia .00 U.H. ak (cms) =	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448	13.38 4.000 .450	Curve # of L	Number (CN)=72	.20
001:0141 * Area 401 CALIB NASHYD 05:401 DP- 2 Unit Hyd Qpe PEAR FLOW TIME TO PEAR RUNOFF COLOR TOTAL RAINFA RUNOFF COEF 001:0142 * Area 501	Area 00 Ia 0.00 Ia 0.00 Ia 0.00 0	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 RALLEDE BA	13.38 4.000 .450	8 Curve) # of L	Number (CN)-72	.20
001:0141 * Area 401 CALIB NASHYD 05:401 DF- 2 Unit Hyd Qpe PEAR FLOW TIME TO PEAR RUNOFF COLOR TOTAL RAINFA RUNOFF COLOR OF TOTAL RAINFA RUNOFF COLOR ARINFA FLOW TOTAL RAINFA RUNOFF COLOR TOTAL RAINFA RUNOFF CO	Area 00 Ia 0.00 Ia 0.00 Ia 0.00 0	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 RALLEDE BA	13.38 4.000 .450	8 Curve) # of L	Number (CN)-72	.20
001:0141 * Area 401 * Area 401 CALIB MASHYD 05:401 DF-2 Unit Hyd Qpe PEAK FLOW TIME TO PEAK RUNGFF VOLUME TOTAL RAINFA RUNGFF COSEF (1) PEAK FLO 001:0142 * Area 501 CALIB STANNHYD 06:5501 DF-1	Area 0.0 Ia 0.	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 RALLEDE BA	13.38 4.000 .450	8 Curve) # of L	Number (CN)-72	.20
001:0141 * Area 401 CALIB NASHYD I OS1:401 DT = 2 Unit Hyd Ope- PEAR FLOW TIME TO PEAR RUNDFF UNITE TO PEAR RUNDFF UNITE TO SEAR * Area 501	Area .00 Ia	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 RALLEDE BA	13.38 4.000 .450 i) SEFLOW I	Curve # of L FANY.	Number (CN)-72 inear Res.(N) = 3	.20
001:0141 * Area 401 CALIB NASHYD I OS1:401 DT = 2 Unit Hyd Ope- PEAR FLOW TIME TO PEAR RUNDFF UNITE TO PEAR RUNDFF UNITE TO SEAR * Area 501	Area 00 1a 00 1a 01 16 16 17 17 18 17 18 18 18 18 18 18 18 18 18	(ha)= (mm)= Tp(hrs)= 1.136 3.30 (: 3.233 (: 4.48 40.526 90.400 .448 NCLUDE BA: 1 (ha)= 1 Imp(%)= IMPERVIOI	13.38 4.000 .450 ii) SEFLOW I	3 Curve) # of L) F ANY. Conversely a con	Number (CN)-72 inear Res.(N) = 3	.20
001:0141 * Area 401 * Area 401 CALIB NASHYD 05:401 Dr- 2 Unit Hyd Qpe PERK FLOW TIME TO PERK RUNOFF VOLUME TOTAL RANNER RUNOFF COEFF (1) PERK FLO 001:0142 * Area 501 CALIB STANDHYD 06:501 Dr- 1 Sufface Area Dep. Storage	Area 00 1a 00 1a 01 16 16 17 17 18 17 18 18 18 18 18 18 18 18 18	(ha)= (mm)= Tp(hrs)= 1.136 3.30 (: 3.233 (: 4.48 40.526 90.400 .448 NCLUDE BA: 1 (ha)= 1 Imp(%)= IMPERVIOI	13.38 4.000 .450 ii) SEFLOW I	Curve # of L F ANY. Dir. C CRIVIOUS (i 1.37 2.50	Number (CN)-72 inear Res.(N) = 3	.20
001:0141 * Area 401 * Area 401 CALIB MASHYD 05:401 DF-2 Unit Hyd Qpe PEAK FLOW TIME TO PEAK RUNOFF VOLUME FUNOFF COMPF FUNOFF COMPF (UNOFF COMPF) CALIB STANDHYD CALIB STANDHYD CALIB STANDHYD Surface Area 501 Surface Area 501 Surface Area 504 Dep. Storage Average Average Surface Area 504	Area 00 1a 00 1a 01 16 16 17 17 18 17 18 18 18 18 18 18 18 18 18	(ha)= (mm)= Tp(hrs)= 1.136 3.30 (: 3.233 (: 4.48 40.526 90.400 .448 NCLUDE BA: 1 (ha)= 1 Imp(%)= IMPERVIOI	13.38 4.000 .450 ii) SEFLOW I	3 Curve) # of L) F ANY. Conversely a con	Number (CN)-72 inear Res.(N) = 3	.20
001:0141 * Area 401 * Area 401 CALIB NASHYD 05:401 Dr- 2 Unit Hyd Qpe PERK FLOW TIME TO PERK RUNOFF VOLUME TOTAL RANNER RUNOFF COEFF (1) PERK FLO 001:0142 * Area 501 CALIB STANDHYD 06:501 Dr- 1 Sufface Area Dep. Storage	Area 00 1a 00 1a 01 16 16 17 17 18 17 18 18 18 18 18 18 18 18 18	(ha) = (mm) = Tp(hrs) = 1.136330 (: 3.233 40.526 90.400448 NCLUDE BA:	13.38 4.000 .450 ii) SEFLOW I	3 Curve 0 # of L) 1 F ANY. 2 O Dir. C CERVIOUS (in 1.37 2.50 6.40	Number (CN)-72 inear Res.(N) = 3	.20
001:0141 * Area 401 * Area 401 CALIS WASHYD 105:401 DT 2 Unit Hyd Qpe PEAN TLOW TIME TO PEAN RUNDFF COTAL RAINFA RUNDFF COTAL RAINFA RUNDFF COTAL * Area 501 CALIS STANDHYD CALIS STANDHYD Surface Area Dep. Storage Average Average Average Manning n	Area	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 NCLUDE BA: (ha)= 1 Imp(%)= 1 Imp(%)= 1 IMPERVIOUS 60.400 .013	13.38 4.000 .450 ii) SEFLOW I	3 Curve 0 # of L 2 Dir. C 2 CRVIOUS (i 1.37 2.50 6.40 3.5.00 .250	Number (CN)-72 inear Res.(N) = 3 Conn.(%) = 35.00	.20
001:0141	Area	(ha)= (mm)= Tp(hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 NCLUDE BA: (ha)= 1 Imp(%)= 1 Imp(%)= 1 IMPERVIOUS 60.400 .013	13.38 4.000 .450 ii) SEFLOW I	3 Curve 0 # of L 2 Dir. C 2 CRVIOUS (i 1.37 2.50 6.40 3.5.00 .250	Number (CN)-72 inear Res.(N) = 3 Conn.(%) = 35.00	.20
001:0141 * Area 401 CALIB WASHYD DS:401 DT 2 Unit Hyd Ope- PEAR FLOW TIME TO PEAR RUNDFF UNITE TO PEAR RUNDFF UNITE TO SEAR RUNDFF UNITE TO SEAR RUNDFF UNITE TO SEAR * Area 501 CALIB STANDHYD G:501 DT 1 Surface Area pep. Storage Avexage Slop Length Mannings n Max.eff.Intee Storage Coef Coef Coef Coef Coef Coef Coef Coe	Area .00 Ta .00 To .0	(ha)= (mm)= Tp (hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 NCLUDE BAI	13.3834.00004 4.00004 4500 3.922 65.000	Curve # of L F ANY. CRIVIOUS (i 1.37 6.40 2.50 6.40 2.50 2.65 116.00 15.91 (iii fi.91)	Number (CN)-72 inear Res.(N) = 3 Conn.(%) = 35.00	.20
001:0141 * Area 401 CALIB WASHYD DS:401 DT 2 Unit Hyd Ope- PEAR FLOW TIME TO PEAR RUNDFF UNITE TO PEAR RUNDFF UNITE TO SEAR RUNDFF UNITE TO SEAR RUNDFF UNITE TO SEAR * Area 501 CALIB STANDHYD G:501 DT 1 Surface Area pep. Storage Avexage Slop Length Mannings n Max.eff.Intee Storage Coef Coef Coef Coef Coef Coef Coef Coe	Area .00 Ta .00 To .0	(ha)- (mm)- Tp(hrs)- 1.136 2.233 40.340 40.404 4.448 NCLUDE BA:	13.38 4.000 4.50 4.50 4.50 4.50 4.50 4.50 4.5	Curve) # of L) Dir. C ERRYIOUS (1 1.37 2.50 6.40 35.00 .250 26.51 16.00 15.91 (ii	Number (CN)-72 inear Res.(N) = 3 Conn.(%) = 35.00	.20
00:0141 * Area 401 * Area 401 CALIB WASHYD 05:441 Unit Hyd Qpe PEAN TLOW FIRST OF PEAN RUNGFF COT 2 (1) PEAK FLO 001:0142 * Area 501 * Surface Area Dep. Storage Average June 1 Surface Area Dep. Storage Average Average Average Manning n Max.eff.Inc	Area .00 Ta .00 To .0	(ha)= (mm)= Tp (hrs)= 1.136 .330 (: 3.233 40.526 90.400 .448 NCLUDE BAI	13.38 4.000 4.50 4.50 4.50 4.50 4.50 4.50 4.5	Curve # of L F ANY. CRIVIOUS (i 1.37 6.40 2.50 6.40 2.50 2.65 116.00 15.91 (iii fi.91)	Number (CN)-72 inear Res.(N) = 3 Conn.(%) = 35.00	.20
001:0141	Areas Area	(ha) = (ha) = Tp(hrs) = 1.136330 (330 (334335 (334335 (13.38 4.000 4.500 4.500 11) 3.926 65.000 PE	Curve) # of L) Dir. C CREWIOUS (i 1.37 2.50 6.40 35.00 25.91 16.00 15.91 (ii 16.00	Number (CN)=72 inear Res.(N)=3 conn.(%)= 35.00) *TOTALS* .167 (111	.20
001:0141	Area Oo I Area Oo I Area Oo I Area Oo I Oo Oo Oo Oo Oo Oo	(ha) = (ha) = Tp(hrs) = 1.136330 (330 (334335 (334335 (13.38 4.000 4.500 4.500 11) 3.926 65.000 PE	Curve # of L F ANY. Dir. C ERVIOUS (i 1.37 2.50 35.00 .250 26.51 16.00 16.00 .07 .10 3.03 3.03 .00 .07 .10 3.03 .00	Number (CN)-72 inear Res.(N)-3 Conn.(%)- 35.00) *TOTALS* .167 (iii	.20
001:0141	Area Oo I Area Oo I Area Oo I Area Oo I Oo Oo Oo Oo Oo Oo	(ha)= (mm)= Tp(hrs)= 1.136 .330 (.330 (.330 (.323) .3233 40.526 .448 NCLUDE BAI .1 Imp(%)= 1 Imp(%)= 1 ImpERVIOU 2.55 4.600 500.00 .318.98 8.00 8.100 8.100 8.100	13.38 4.0000 450 450 65.000 3.92 65.00 US PE	Curve) # of L) Dir. C CREWIOUS (i 1.37 2.50 6.40 35.00 25.91 16.00 15.91 (ii 16.00	Number (CN)=72 inear Res.(N)=3 conn.(%)= 35.00) *TOTALS* .167 (111	.20

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 76.5 Ia = Dep. Storage (Above)

 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

001:0143				
ROUTE RESERVOIR	Requested routing t	ime step = 1.	0 min.	
IN>06:(501) OHT<07:(POND)	OUTFLOW STORAGE (cms) (ha.m.) (ha.m.) 0.000 .0000E+00 .000 .000E+00 .005 .3000E-01 .006 .4500E-01 .048 .7500E-01 .058 .9000E-01 .056 .0500E-01 .05	(cms) .074 .080 .086 .092 .098 .325 .735	STORAGE (ha.m.) .1200E+00 .1350E+00 .1550E+00 .1650E+00 .1850E+00 .1950E+00 .2100E+00	
ROUTING RESULTS INFLOW >06: (501) OUTFLOW<07: (POND) OVERFLOW<**: (000001)	.00 .0	.000	R.V. (mm) 70.760 70.758 .000	
CUMULA	NUMBER OF SIMULATED STIVE TIME OF OVERFI STAGE OF TIME OVERFI	OWS (hours) =	.00	
PEAK TIME S MAXIMU	FLOW REDUCTION [SHIFT OF PEAK FLOW IM STORAGE USED	Qout/Qin](%)= (min)= (ha.m.)=.	51.210 146.00 1471E+00	
001:0144				

*				
	Comments: 100 year A	1\LAKEST~1\100 ES 12hr	AES12.stm	
TIME RA: hrs mm/l 1.00 17.9 2.00 20.9 3.00 19.9	IN TIME RAIN hr hrs mm/hr 16 4.00 14.955 17 5.00 13.958 10 6.00 7.976	TIME RA hrs mm/ 7.00 2.9 8.00 .9 9.00 .0	IN TIME hr hrs 91 10.00 97 11.00 00 12.00	RAIN mm/hr .000 .000
001:0145				
* * * Area 101				
CALIB STANDHYD 01:101 DT= 1.00	Area (ha) = . Total Imp(%) = 50.	28 00 Dir. Conn	. (%)= 35.00)
Surface Area (ha Dep. Storage (mm Average Slope (i Length (r Mannings n	IMPERVIOUS 1) = .14 1) = .60 5) = 2.90 1) = 42.00 013	PERVIOUS (i) .14 2.50 2.90 35.00 .250		
Max.eff.Inten.(mm/h) over (mir Storage Coeff. (mir Unit Hyd. Tpeak (mir Unit Hyd. peak (cmr	20.94 a) 2.00 a) 2.06 (ii) a) 2.00	20.92 13.00 12.96 (ii) 13.00	*TOTALS*	
PEAK FLOW (cm: TIME TO PEAK (hr: RUNOFF VOLUME (mr TOTAL RAINFALL (mr RUNOFF COEFFICIENT		.01 3.02 67.96 99.70 .68	.013 (iii 3.000 78.862 99.700 .791	1)
CN* = 82.0 (ii) TIME STEP (DT)	SELECTED FOR PERVIOU IA = Dep. Storage SHOULD BE SMALLER AGE COEFFICIENT. S NOT INCLUDE BASEFI	(Above) OR EQUAL		
001:0146				

* Area 201

*						
CALIB STANDHYD	Area	(ha) =	.32			
02:201 DT= 1.00	Total I	mp (%) =	50.00	Dir. Conn.	(%) =	35.00
	IMI	PERVIOUS	PERVI	IOUS (i)		
Surface Area	(ha) =	.16		.16		
Dep. Storage	(mm) =	.60	2.	.50		
Average Slope	(%) −	2.80	2.	.80		
Length	(m) =	20.00	35.	.00		
Mannings n	-	.013	. 2	250		
Max.eff.Inten.(mm	n/hr) =	20.94	20.	. 93		
over ((min)	1.00	12.	.00		
Storage Coeff. ((min) =	1.33 (i	.i) 12.	.34 (ii)		
Unit Hyd. Tpeak ((min) =	1.00	12.	.00		
Unit Hyd. peak ((cms) =	.90		.09		
					*TOTALS	
PEAK FLOW ((cms) =	.01		.01	.015	(iii)
TIME TO PEAK ((hrs) =	1.28	3.	.02	3.000	
RUNOFF VOLUME	(mm) =	99.10	67.	. 96	78.862	
TOTAL RAINFALL	(mm) -	99.70	99.	.70	99.700	
RUNOFF COEFFICIEN	PT -	.99		. 68	.791	
(i) CN PROCEDUR	RE SELECTED	FOR PERV	TIOUS LOS	SSES:		
CN+ = 82.0) Ia = De	ep. Stora	ige (Abo	ove)		
(ii) TIME STEP ((DT) SHOULD	BE SMALI	ER OR EC	UAL		

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

001:0147							
*							
CALIB STANDHYD	Area	(ha) =	8.44				
03:301 DT= 1.00	Total	Imp (%) =	60.00	Dir.	. Conn.	(%) =	25.00
	-						
		IMPERVIOU	S PERV	IOUS	(i)		
Surface Area	(ha) =	5.06	3	.38			
Dep. Storage	(mm) =	.60	2	.50			
Average Slope	(%) −	4.90	6	.40			
Length	(m) =	700.00	35	.00			
Mannings n	-	.013	-	250			
Max.eff.Inten.(n	m/hr)=	20.94	30	.40			
over	(min)	10.00	17	.00			
Storage Coeff.	(min) =	9.53	(ii) 16	.93	(ii)		
Unit Hyd. Tpeak	(min) =	10.00	17	.00			
Unit Hyd. peak	(cms) =	.12		.07			
						*TOTALS	*
PEAK FLOW	(cms) =	.12		.28		.393	(iii)
TIME TO PEAK	(hrs) =	2.00	3	.05		3.017	
RUNOFF VOLUME	(mm) =	99.09	69	.11		76.618	
TOTAL RAINFALL	(mm) =	99.70	99	.70		99.700	
RUNOFF COEFFICIE	INT -	.99		. 69		.768	

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

 CN* = 76.5 Ia = Dep. Storage (Above)

 (ii) THMS STEP (DT) SHOULD BE SHALLER OR EQUAL

 THAN THE STORAGE COEFFICIENT.

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

*					
ROUTE RESERVOIR IN>03:(301)	Requested	lrouting	time	step = 1	.0 min.
OUT<04:(POND)		OUTLFOW	STOR	RAGE TABLE	
	OUTFLOW	STORAGE	- 1	OUTFLOW	STORAGE
	(cms)	(ha.m.)	1	(cms)	(ha.m.)
	.000	.0000E+00	- 1	.059	.3300E+00
	.007	.3000E-01	i i	.062	.3600E+00
	.009	.6000E-01	1	.065	.3900E+00
	.011	.9000E-01	- 1	.068	.4200E+00
	.026	.1200E+00	- 1	.070	.4500E+00
	.033	.1500E+00	- 1	.073	.4800E+00
	.039	.1800E+00	1	.075	.5100E+00
	.043	.2100E+00	- 1	.077	.5400E+00
	.048	.2400E+00	- 1	.529	.5700E+00
		.2700E+00	- 1	.000	
	.055	.3000E+00	- 1	.000	.0000E+00
ROUTING RESULTS	AR	EA QP	EAK	TPEAK	R.V.
	(h	(c	ms)	(hrs)	(mm)
INFLOW >03: (301) 8.	44 .	393	3.017	76.618
OUTFLOW<04: (POND) 8.	44 .	075	6.783	76.616
OVERFLOW<**: (00000)		00 .	000	.000	.000

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

 PEAK
 FLOW
 REDUCTION [Qout/Qin] (%) = 19.066

 TIME SHIFT OF PEAK FLOW
 (min) = 226.00

 MAXIMUM
 STORAGE
 USED
 (ha.m.) = .5113E+00

001:0149
* Area 401
CALIB NASHYD Area (ha)= 13.38
Unit Hyd Qpeak (cms) = 1.136
PEAK FLOW (cms) = .387 (1) TIME TO PEAK (hrs) = 3.200 RINNOFF VOLIME (mm) = 47.331 TOTAL RAINFALL (mm) = 99.700 RINNOFF COEFFICIENT = .475 (1) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0150
* Area 501 *
CALIB STANDHYD
IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.55 1.37 Dep. Storage (mm)= .60 2.50
Average Slope (%)= 4.90 6.40
Average Slope (%) = 4.90 6.40 Length (m) = 500.00 35.00 Mannings n = .013 .250
Max.eff.Inten.(mm/hr) = 20.94 30.08
Max.eff.Inten.(mm/hr)
Unit Hyd. peak (cms)= .14 .07 *TOTALS*
PEAK FLOW (cms) = .08 .11 .187 (iii) TIME TO FEAK (hrs) = 2.00 3.03 3.000 RUNOFF VOLUME (mm) = 99.10 68.91 79.480
PEAK FLOW (cms)08 .11 .187 (iii) TIME TO FEAK (hrs) - 2.00 3.03 3.000 RUNGPY VOLUME (mm) - 99.10 68.91 79.480 TUME PALNULL (mm) - 99.70 99.70 99.70 RUNGPY CORFFICIENT99 .69 .797
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CM* - 75.5 Ia - Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SAULER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAR FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
001:0151
ROUTE RESERVOIR Requested routing time step = 1.0 min. INNO6:(501)
OUTELOW STORAGE OUTELOW STORAGE
(cms) (hs.m.) (cms) (hs.m.) 000 .0000s+00 .074 .1200s+00 .004 .1500s+01 .080 .1350s+00 .004 .1500s-01 .080 .1350s+00 .005 .3000s-01 .086 .1500s+00 .006 .4500s-01 .092 .1550s+00 .036 .6000s-01 .092 .1500s+00 .048 .7500s-01 .325 .1350s+00 .058 .9000s-01 .735 .2100s+00
.004 .1500E-01 .080 .1350E+00 .005 .3000E-01 .086 .1500E+00
.006 .4500E-01 .092 .1650E+00
.048 .7500E-01 .325 .1950E+00
.006 .4500E-01 .098 .1800E-00 .036 .6000E-01 .098 .1800E-00 .048 .7500E-01 .325 .1950E-00 .088 .9000E-01 .735 .2100E-00 .066 .1050E+00 .000 .0000E-00
DOWN DOWN DOWN DOWN DOWN DOWN
COUTING RESULTS
OVERFLOW<**: (000001) .00 .000 .000 .000
TOTAL NUMBER OF SIMULATED OVERFLOWS = 0
COMULATIVE TIME OF OVERFLOWS (hours) = .00 PERCENTAGE OF TIME OVERFLOWING (%) = .00
PEAK FLOW REDUCTION [Oout/Oin](%) = 49.629
PEAK FLOW REDUCTION [Qout/Qin](8) = 49.629 TIME SHIFT OF PEAK FLOW (min) = 147.00 MAXIMUM STORAGE USED (ha.m.)=.16698+00
001:0152

*						
*						
*******		****	****	* * *	***	
FINI	ISH					
		****	****	***	***	*******
	INGS / ERRORS / NOTES					
	COMPUTE VOLUME					
	WARNING: Calculated volume	may	not :	be	the	maximum.
	COMPUTE VOLUME					
	WARNING: Calculated volume	may	not :	be	the	maximum.
	COMPUTE VOLUME					
	WARNING: Calculated volume	may	not .	be	the	maximum.
	COMPUTE VOLUME					
	WARNING: Calculated volume COMPUTE VOLUME	may	not.	be	tne	maximum.
	WARNING: Calculated volume COMPUTE VOLUME	may	not.	be	tne	maximum.
	WARNING: Calculated volume COMPUTE VOLUME	may	not.	be	tne	maximum.
	WARNING: Calculated volume					
	COMPUTE VOLUME	may	not.	be	the	maximum.
	WARNING: Calculated volume	m 2 11	not	ho	+ho	moust mum
	COMPUTE VOLUME	ma y	1100	De	cire	maximum.
	WARNING: Calculated volume	m 2 11	not	ho	+ho	moust mum
	COMPLITE VOLUME	ma y	1100	De	cire	maximum.
	WARNING: Calculated volume	m a 17	not	ha	the	mavimum
	tion ended on 2004-09-19					

Stage-Storage-Discharge Relationship Pond 301

Orifice 1 - quality

orifice	Q=cA(2gh)^0.5		
orifice diameter	0.1	С	0.6
orifice radius	0.05	g	9.81
orifice area	0.00785	2g	19.62

Orifice 2 - quantity

I	orifice	(Q=cA(2gh)^0.5		
	orifice diam	neter	0.14	С	0.6
ľ	orifice ra	adius	0.07	g	9.81
Γ	orifice	area	0.01539	2q	19.62

Overflow

overflow	Q=CLH^1.5
С	1.67
L	8.5

	•	_		C	Orifice 1	0	rifice 2	Overflow		
Description	Elevation	Storage (m3)	ha m	Head (m)	Discharge (m3/s)	Head (m)	Discharge (m3/s)			Qt
		0	0.0000	0	0.0000	•				0.0000
		300.0	0.0300	0.10	0.0066					0.0066
		600.0	0.0600	0.20	0.0093					0.0093
Top of quality		900.0	0.0900	0.30	0.0114	0	0			0.0114
		1200.0	0.1200	0.40	0.0132	0.1000	0.0129			0.0261
		1500.0	0.1500	0.50	0.0148	0.2000	0.0183			0.0330
		1800.0	0.1800	0.60	0.0162	0.3000	0.0224			0.0386
		2100.0	0.2100	0.7000	0.0175	0.4000	0.0259			0.0433
		2400.0	0.2400	0.8000	0.0187	0.5000	0.0289			0.0476
		2700.0	0.2700	0.9000	0.0198	0.6000	0.0317			0.0515
		3000.0	0.3000	1.0000	0.0209	0.7000	0.0342			0.0551
		3300.0	0.3300	1.1000	0.0219	0.8000	0.0366			0.0585
		3600.0	0.3600	1.2000	0.0229	0.9000	0.0388			0.0616
		3900.0	0.3900	1.3000	0.0238	1.0000	0.0409			0.0647
		4200.0	0.4200	1.4000	0.0247	1.1000	0.0429			0.0676
		4500.0	0.4500	1.5000	0.0256	1.2000	0.0448			0.0703
		4800.0	0.4800	1.6000	0.0264	1.3000	0.0466			0.0730
		5100.0	0.5100	1.6000	0.0264	1.4000	0.0484			0.0748
top of quantity		5400.0	0.5400	1.7000	0.0272	1.5000	0.0501	0.0000	0.0000	0.0773
		5700.0	0.5700	1.8000	0.0280	1.6000	0.0517	0.1000	0.4489	0.5286
		6000.0	0.6000	1.9000	0.0288	1.7000	0.0533	0.2000	1.2696	1.3517
top of overflow		6300.0	0.6300	2.0000	0.0295	1.8000	0.0549	0.3000	2.3325	2.4168

Stage-Storage-Discharge Relationship Pond 501

Orifice 1 - quality

orifice	Q=cA(2gh)^0.5	j	
orifice diameter	0.075	С	0.6
orifice radius	0.0375	g	9.81
orifice area	0.00442	2g	19.62

Orifice 2 - quantity

orifice	Q=cA(2gh)^0.5	i	
orifice diameter	0.207	С	0.6
orifice radius	0.1035	g	9.81
orifice area	0.03364	2g	19.62

Overflow

overflow	Q=CLH^1.5
С	1.67
L	4.2

				C	Orifice 1	Ori	fice 2	Overflow		
Description	Elevation	Storage (m3)	ha m	Head (m)	Discharge (m3/s)	Head (m)	Discharge (m3/s)			Qt
		0	0.0000	0	0.0000					0.0000
		150.0	0.0150	0.10	0.0037					0.0037
		300.0	0.0300	0.20	0.0052					0.0052
Top of quality		450.0	0.0450	0.30	0.0064	0	0			0.0064
		600.0	0.0600	0.40	0.0074	0.1000	0.0283			0.0357
		750.0	0.0750	0.50	0.0083	0.2000	0.0400			0.0483
		900.0	0.0900	0.60	0.0091	0.3000	0.0490			0.0581
		1050.0	0.1050	0.70	0.0098	0.4000	0.0565			0.0664
		1200.0	0.1200	0.80	0.0105	0.5000	0.0632			0.0737
		1350.0	0.1350	0.90	0.0111	0.6000	0.0692			0.0804
		1500.0	0.1500	1.00	0.0117	0.7000	0.0748			0.0865
		1650.0	0.1650	1.10	0.0123	0.8000	0.0800			0.0923
top of quantity		1800.0	0.1800	1.20	0.0129	0.9000	0.0848	0.0000	0.0000	0.0977
		1950.0	0.1950	1.30	0.0134	1.0000	0.0894	0.1000	0.2218	0.3246
		2100.0	0.2100	1.40	0.0139	1.1000	0.0938	0.2000	0.6274	0.7350
top of overflow		2250.0	0.2250	1.50	0.0144	1.2000	0.0979	0.3000	1.1525	1.2648



Pond 301

24 hour Draw Down

	25 mm	
9	1058	m^3
/g	0.0122	m³/s

Forebay Sizing Calculations

Settling Calculation
D=SQRT(rQp/Vs)

r	2	
Qp	0.0122	m^3/s
Vs	0.0003	m^3/s
D	9.04	m

Dispersion Calculation D=8Q/dVf

Q	0.203	m^3/s
d	1	m
Vf	0.5	m/s
D	3.25	m

Width Calculation W=D/8

D	9.04	m
W	1.13	m

Note: Qp = discharge of quality event for 24 hr draw down

Q = Q 5 from SWMHYMO model

Pond 501

24 hour Draw Down

Event	25 mm	
volume	552	m^3
24 hr avg	0.0064	m^3/s

Forebay Sizing Calculations

Settling Calculation D=SQRT(rQp/Vs)

	-,	_
r	2	
Qp	0.0064	m³/s
Vs	0.0003	m³/s
D	6.53	lm

Dispersion Calculation D=8Q/dVf

D-0Q/UVI		_
Q	0.099	m³/s
d	1	m
Vf	0.5	m/s
D	1.58	m

Width Calculation *W=D/8*

5,0		
D	6.53	m
W	0.82	m

Note: Qp = discharge of quality event for 24 hr draw down

Q = Q 5 from SWMHYMO model



Sediment Accumulation Pond 301

Initial Volume Avialable in Main Pond	1000	cubic metres	
Initial Volume Avialable in Forebay	500	cubic metres	
Target Volume for Cleanout	75 % remaining]	
Contributing Area	8.44	ha	
Annual Loading @ 55%	1.9	cubic metres\ha	per MOE Table 6.3
annual accumulation (site)	16.036	Cubic metres	

Main Pond 20 % of sediment

			% Volume
Year	Volume Available	Accumulated Sediment	Remaining
0	1000	0	100
1	996.8	3.2	100
2	993.6	6.4	99
3	990.4	9.6	99
4	987.2	12.8	99
5	984.0	16.0	98
6	980.8	19.2	98
7	977.5	22.5	98
8	974.3	25.7	97
9	971.1	28.9	97
10	967.9	32.1	97
11	964.7	35.3	96
12	961.5	38.5	96
13	958.3	41.7	96
14	955.1	44.9	96
15	951.9	48.1	95
16	948.7	51.3	95
17	945.5	54.5	95
18	942.3	57.7	94
19	939.1	60.9	94
20	935.9	64.1	94

Forebay 80 % of sediment

			% Volume
Year	Volume Available	Accumulated Sediment	Remaining
0	500	0	100
1	487.2	12.8	97
2	474.3	25.7	95
3	461.5	38.5	92
4	448.7	51.3	90
5	435.9	64.1	87
6	423.0	77.0	85
7	410.2	89.8	82
8	397.4	102.6	79
9	384.5	115.5	77
10	371.7	128.3	74
11	358.9	141.1	72
12	346.1	153.9	69
13	333.2	166.8	67
14	320.4	179.6	64
15	307.6	192.4	62
16	294.7	205.3	59
17	281.9	218.1	56

Sediment Accumulation Pond 501

Initial Volume Avialable in Main Pond	500	cubic metres	
Initial Volume Avialable in Forebay	300	cubic metres	
Target Volume for Cleanout	75 % remaining		
Contributing Area	3.92	ha	
Annual Loading @ 65%	2.5	cubic metres\ha	per MOE Table 6.3
annual accumulation (site)	9.8	Cubic metres	

Main Pond 20 % of sediment

			% Volume
Year	Volume Available	Accumulated Sediment	Remaining
0	500	0	100
1	498.0	2.0	100
2	496.1	3.9	99
3	494.1	5.9	99
4	492.2	7.8	98
5	490.2	9.8	98
6	488.2	11.8	98
7	486.3	13.7	97
8	484.3	15.7	97
9	482.4	17.6	96
10	480.4	19.6	96
11	478.4	21.6	96
12	476.5	23.5	95
13	474.5	25.5	95
14	472.6	27.4	95
15	470.6	29.4	94
16	468.6	31.4	94
17	466.7	33.3	93
18	464.7	35.3	93
19	462.8	37.2	93
20	460.8	39.2	92

Forebay 80 % of sediment

	70 01 000		% Volume
Year	Volume Available	Accumulated Sediment	Remaining
0	300	0	100
1	292.2	7.8	97
2	284.3	15.7	95
3	276.5	23.5	92
4	268.6	31.4	90
5	260.8	39.2	87
6	253.0	47.0	84
7	245.1	54.9	82
8	237.3	62.7	79
9	229.4	70.6	76
10	221.6	78.4	74
11	213.8	86.2	71
12	205.9	94.1	69
13	198.1	101.9	66
14	190.2	109.8	63
15	182.4	117.6	61
16	174.6	125.4	58
17	166.7	133.3	56