APPENDIX C
Pre-Development Input Parameters

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	B
Medium to Coarse Loams	
- overlying sand, gravel or limestone, well drained	AB
- shallow, overlying Precambrian bedrock or clay subsoil	B
Medium Textured Loams	
- shallow, overlying limestone bedrock	B
- 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	C
- 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/Land Use Curve Numbers

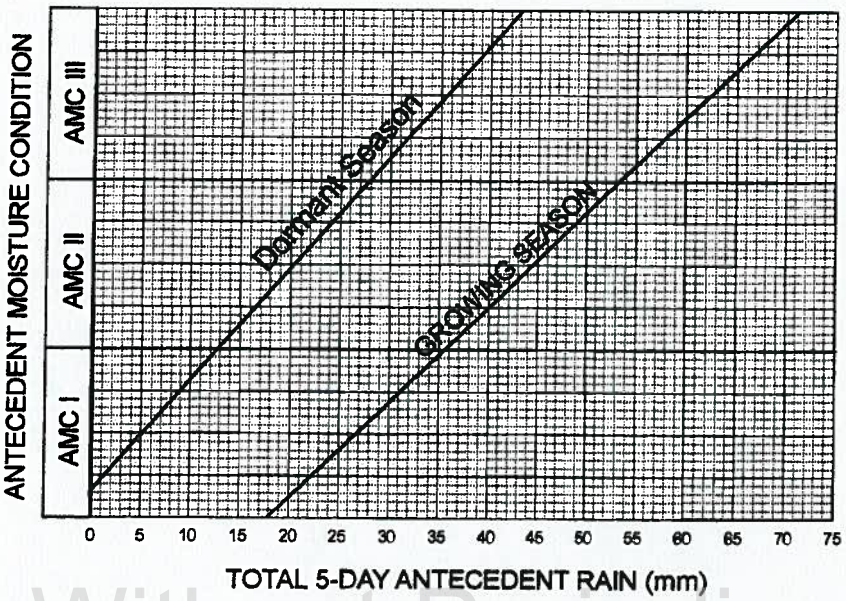
Land Use	Treatment or Practice	Hydrologic Condition[4]	Hydrologic Soil Group			
			A	B	C	D
Fallow	Straight row	—	77	86	91	94
Row crops	"	Poor	72	81	88	91
	"	Good	67	78	85	89
	Contoured	Poor	70	79	84	88
	"	Good	65	75	82	86
	" and terraced	Poor	66	74	8	82
	" " "	Good	62	71	78	81
Small grain	Straight row	Poor	65	76	84	88
		Good	63	75	83	87
	Contoured	Poor	63	74	82	85
		Good	61	73	81	84
	" and terraced	Poor	61	72	79	82
		Good	59	70	78	81
Close-seeded legumes[2] or rotation meadow	Straight row	Poor	66	77	85	89
	" "	Good	58	72	81	85
	Contoured	Poor	64	75	83	85
	"	Good	55	69	78	83
	" and terraced	Poor	63	73	80	83
	" and terraced	Good	51	67	76	80
Pasture or range		Poor	68	79	86	89
		Fair	49	69	79	84
	Contoured	Good	39	61	74	80
	"	Poor	47	67	81	88
	"	Fair	25	59	75	83
		Good	6	35	70	79
Meadow		Good	30	58	71	78
Woods		Poor	45	66	77	83
		Fair	36	60	73	79
		Good	25	55	70	77
Farmsteads		—	59	74	82	86
		—	72	82	87	89
		—	74	84	90	92

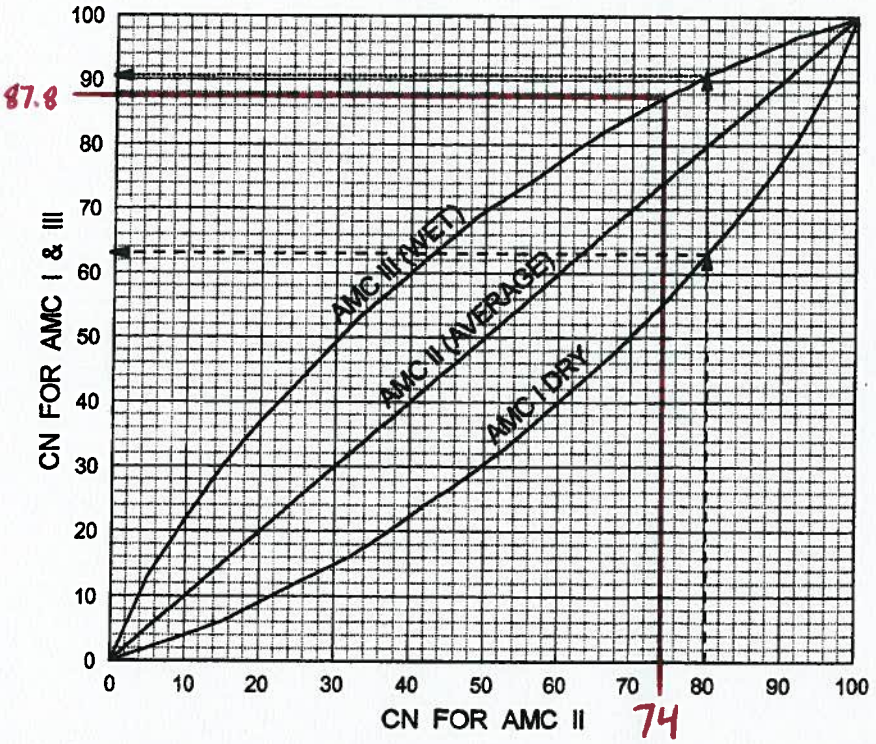
For average anticedent soil moisture condition (AMC II)
[2] Close-drilled or broadcast.

[4] The hydrologic condition of cropland is good if a good crop rotation practice is used; it is poor if one crop is grown continuously.

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

Design Chart 1.10: Antecedent Mosisture Condition





EXAMPLE

AMC II CN = 80
AMC I CN = 63
AMC III CN = 91

COLE ENGINEERING

Melody Giles, E.I.T.

Conversion of CN to CN*
Update to VO2 Model

Glenway C.C, The Kerbel Group / Lakeview Homes, Town of Newmarket
File No. L09-301
Date: January 2012

MTO Drainage Management Manual, 1997
Design Chart 1.09: Soil/Land Use Curve Numbers

Based on clay loam soil (Type C) determined from a soils map of York County (Soil Surveys Ontario) a CN value of 74 was determined using MTO Design Charts 1.08 and 1.09 for pasture land use under good hydrologic condition.

Note: This CN value is based on AMC II and is not applicable to frozen soils or to periods in which snowmelt contributes to runoff

Pre-Development Condition Parameters- IA, CN*

CN to CN* Convention

Assumption:

P = 117.5 mm Oak Ridges IDF Data - 24hr 100 yr storm

Subcatchment	IA (mm)	CN (AMC II)	CN (AMC III)	S	Q	IA*	S*	CN* (AMC III)	CN* (AMC II)
All	5	74.0	87.8	35.29	85.36	5.29	36.07	87.6	74.0

Notes:
IA should be set to a value in the range of 1.0 mm and 5.0 mm
CN (AMC III) from MTO Drainage Manual Design Chart 1.10

Source of Equations: Visual OTTHYMO v2.0 Reference Manual

COLE ENGINEERING

Pre-Development (OTTHYMO)
Nashyd Input Parameters
Glenway Estates
File No. L09-301
Date: January 2012

Parameter	Unit	Description	4-ex2.3	4-ex1.1	4.1	4.3	4.5	6-ex3.3	6.1	6.3	6.4	8.1	8.3	9.3	9.01	9.03
Area	ha	Watershed Area	0.91	6.53	10.18	2.59	1.61	1.33	8.03	10.64	2.11	3.28	2.90	1.34	0.10	2.51
TP	hr	Unit Hydrograph Time to Peak	0.17	0.19	0.27	0.22	0.13	0.13	0.22	0.24	0.26	0.10	0.23	0.22	0.05	0.27
DT	min	Time Step Increment	12													
DWF	cms	Dry Weather Flow (Base Flow)	0													
CN*	-	Modified SCS Curve Number	74**													
IA	mm	Initial Abstraction	5													
N	-	Number of Linear Reservior	3													
Rain	mm/hr	Optional Rainfall Intensities	0-Without Rainfall													

**** Note: Based on clay loam soil (Type C) determined from a soils map of York County (Soil Surveys Ontario). CN value of 74 was determined with MTO Design Charts 1.08 and 1.09 1.09 for pasture land use under good hydrologic condition. CN was converted to CN*.**

Time of Concentration Calculation

Area Number	Area	C_{PRE}	L	Elevation Change	Sw	Tp (Airport)
	(ha)		(m)	(m)	(m/m)	(hr)
4-ex2.3	0.91	0.30	60	2	2.5	0.17
4-ex1.1	6.53	0.30	200	20	10.0	0.19
4.1	10.18	0.30	250	12	4.8	0.27
4.3	2.59	0.20	210	20	9.5	0.22
4.5	1.61	0.20	85	10	11.8	0.13
6-ex3.3	1.33	0.20	70	7	10.0	0.13
6.1	8.03	0.30	210	15	7.1	0.22
6.3	10.64	0.30	240	16	6.7	0.24
6.4	2.11	0.20	200	12	6.0	0.26
8.1	3.28	0.30	70	9	12.9	0.10
8.3	2.21	0.20	140	7	5.0	0.23
9.3	1.34	0.30	110	3	2.7	0.22
9.01	0.10	0.20	15	2	13.3	0.05
9.03	2.51	0.30	200	7	3.5	0.27

COLE ENGINEERING

Pre-Development (OTTHYMO)
STANDHYD - Input Parameters

Glenway Estates
File No. L09-301
Date: January, 2012

Parameter	Units	Description	4-ex2.1	4-ex2.2	4-ex2.4	4-ex1.2	4-ex1.3	4.2	4.4	6-ex3.1	6-ex3.2	6.2	6.01	8.01	8.2	68.1	9.1	9.2	9.4	9.02	98.1
AREA	ha	Drainage Area	2.95	3.87	6.86	2.34	0.97	6.71	0.85	3.62	1.45	17.98	1.21	2.50	10.16	1.50	2.71	5.86	2.71	0.47	1.27
XIMP	%	Impervious Area (Direct Connection)	25.0%	61.0%	61.0%	55.0%	64.0%	71.0%	28.0%	28.0%	64.0%	61.0%	55.0%	55.0%	66.0%	64.0%	25.0%	56.0%	78.0%	70.0%	68.0%
TIMP	%	Total Impervious Area	25.0%	61.0%	61.0%	55.0%	64.0%	71.0%	28.0%	28.0%	64.0%	61.0%	55.0%	55.0%	66.0%	64.0%	25.0%	56.0%	78.0%	70.0%	68.0%
LGI	-	Overland Flow Length (Impervious)	30																		
SLPI	%	Average Slope (Impervious)	2																		
DT	min	Time Step Increment	12																		
DWF	m^3/s	Dry Weather Flow (Base Flow)	0																		
LOSS	-	Rainfall Loss Method	Loss = 2 - Modified SCS Curve Method, CN*= 74																		
SLPP	%	Average Slope (Pervious)	2																		
LGP	m	Overland Flow Length (Pervious)	20																		
MNP	-	Manning's Roughness Coefficient (Pervious)	0.25																		
DPSI	mm	Depression Storage (Impervious)	1																		
MNI	-	Manning's Roughness Coefficient (Impervious)	0.013																		

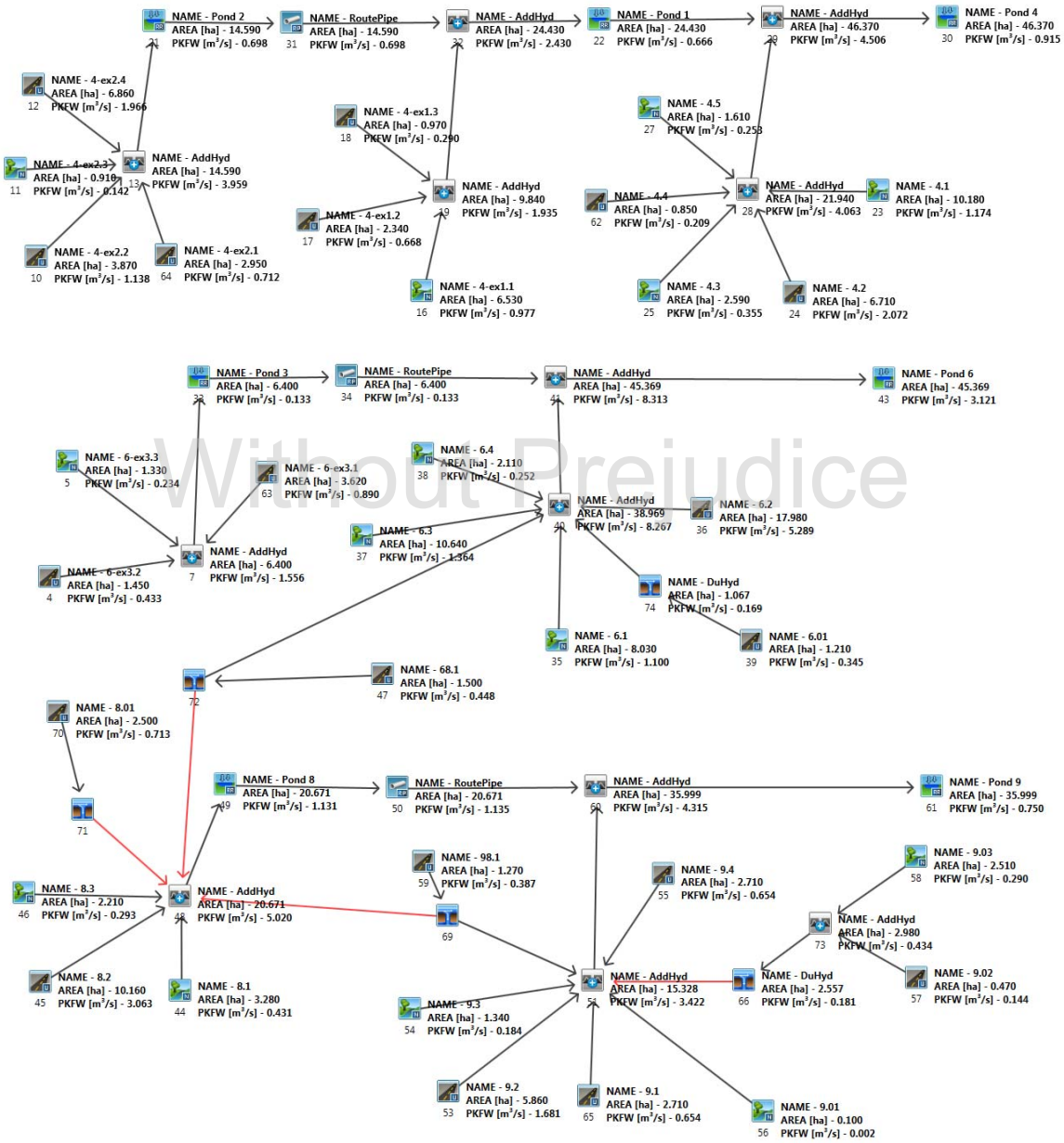
APPENDIX D
Pre-Development Hydrologic Model Output

COLE ENGINEERING

Experience Enhancing Excellence

L09-301
Glenway golf course development, Newmarket, ON
24 Hour SCS Storm Pre-Development Model Schematic
July 2013

VO2 Model Schematic



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==========================================================================================
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       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\122dfadb-b082-4939-8279-
0906fc8de536\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\122dfadb-b082-4939-8279-
0906fc8de536\Scenario.sum


DATE: 07/24/2013                          TIME: 11:31:13

USER:


COMMENTS: _____________________________________________________


------------------------------------------------------------------------------------------
-----
  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************


-------------------
|    READ STORM   |     Filename: C:\Users\DMcBrayne\AppD
|                 |               ata\Local\Temp\
|                 |               122dfadb-b082-4939-8279-0906fc8de536\44ae5d35
| Ptotal= 52.12 mm|     Comments: TWO YEAR SCS STORM  WITH A TWELVE MINUTE
-------------------

                TIME    RAIN |  TIME    RAIN | '  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr | '   hrs   mm/hr |   hrs   mm/hr
               0.20    0.51 |  6.20    1.02 |  12.20   10.67 |  18.20    0.76
               0.40    0.51 |  6.40    1.02 |  12.40    6.60 |  18.40    0.76
               0.60    0.51 |  6.60    1.02 |  12.60    4.83 |  18.60    0.76
               0.80    0.51 |  6.80    1.02 |  12.80    4.57 |  18.80    0.76
               1.00    0.51 |  7.00    1.02 |  13.00    3.30 |  19.00    0.76
               1.20    0.51 |  7.20    1.02 |  13.20    2.79 |  19.20    0.76
               1.40    0.51 |  7.40    1.02 |  13.40    2.79 |  19.40    0.76
               1.60    0.51 |  7.60    1.02 |  13.60    2.79 |  19.60    0.76
               1.80    0.51 |  7.80    1.02 |  13.80    2.79 |  19.80    0.76
               2.00    0.51 |  8.00    1.02 |  14.00    2.79 |  20.00    0.76
               2.20    0.51 |  8.20    1.52 |  14.20    1.52 |  20.20    0.51
               2.40    0.51 |  8.40    1.52 |  14.40    1.52 |  20.40    0.51
               2.60    0.51 |  8.60    1.52 |  14.60    1.52 |  20.60    0.51
               2.80    0.51 |  8.80    1.52 |  14.80    1.52 |  20.80    0.51
               3.00    0.51 |  9.00    1.52 |  15.00    1.52 |  21.00    0.51
               3.20    0.51 |  9.20    1.52 |  15.20    1.52 |  21.20    0.51
               3.40    0.51 |  9.40    1.52 |  15.40    1.52 |  21.40    0.51
               3.60    0.51 |  9.60    1.52 |  15.60    1.52 |  21.60    0.51
               3.80    0.51 |  9.80    1.52 |  15.80    1.52 |  21.80    0.51
               4.00    0.51 | 10.00    1.52 |  16.00    1.52 |  22.00    0.51
               4.20    1.02 | 10.20    3.05 |  16.20    1.02 |  22.20    0.51
               4.40    1.02 | 10.40    3.05 |  16.40    1.02 |  22.40    0.51
               4.60    1.02 | 10.60    3.05 |  16.60    1.02 |  22.60    0.51
               4.80    1.02 | 10.80    3.05 |  16.80    1.02 |  22.80    0.51
               5.00    1.02 | 11.00    3.05 |  17.00    1.02 |  23.00    0.51
               5.20    1.02 | 11.20    4.06 |  17.20    1.02 |  23.20    0.51
               5.40    1.02 | 11.40    5.84 |  17.40    1.02 |  23.40    0.51
               5.60    1.02 | 11.60   13.21 |  17.60    1.02 |  23.60    0.51
               5.80    1.02 | 11.80   28.96 |  17.80    1.02 |  23.80    0.51
               6.00    1.02 | 12.00   60.45 |  18.00    1.02 |  24.00    0.51

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

-------------------
| CALIB           |
| NASHYD   (0011) |   Area    (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.040 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  14.903
     TOTAL RAINFALL   (mm)=  52.121
     RUNOFF COEFFICIENT   =   0.286

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

------------------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0010)|   Area    (ha)=   3.87
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36          1.51
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      60.45         24.82
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.23 (ii)     9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.40          0.08       0.480 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00        12.00
     RUNOFF VOLUME    (mm)=      51.12         18.32        38.33
     TOTAL RAINFALL   (mm)=      52.12         52.12        52.12
     RUNOFF COEFFICIENT   =       0.98          0.35         0.74

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

------------------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0012)|   Area    (ha)=   6.86
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.19          2.68
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     213.85         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      60.45         24.82
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       4.00 (ii)    12.14 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.13          0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.68          0.11       0.765 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.20        12.00
     RUNOFF VOLUME    (mm)=      51.12         18.32        38.33
     TOTAL RAINFALL   (mm)=      52.12         52.12        52.12
     RUNOFF COEFFICIENT   =       0.98          0.35         0.74

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

------------------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0064)|   Area    (ha)=   2.95
```

|ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.74	2.21
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	60.45	24.82
over (min)	12.00	12.00
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	0.12	0.12	0.246 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.12	18.32	26.52
TOTAL RAINFALL (mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT =	0.98	0.35	0.51

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0010):	3.87	0.480	12.00	38.33
	+ ID2= 2 (0011):	0.91	0.040	12.00	14.90
	ID = 3 (0013):	4.78	0.520	12.00	33.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0013):	4.78	0.520	12.00	33.87
	+ ID2= 2 (0012):	6.86	0.765	12.00	38.33
	ID = 1 (0013):	11.64	1.285	12.00	36.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0013):	11.64	1.285	12.00	36.50
	+ ID2= 2 (0064):	2.95	0.246	12.00	26.52
	ID = 3 (0013):	14.59	1.532	12.00	34.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.6510	0.4563
DT= 5.0 min	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	1.532	12.00	34.48
OUTFLOW: ID= 1 (0021)	14.590	0.360	12.30	34.46

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.54
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.2091

ROUTE PIPE (0031)	PIPE Number = 1.00
IN= 2---> OUT= 1	Diameter (mm)=1650.00
DT= 5.0 min	Length (m)= 500.00
	Slope (m/m)= 0.005
	Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.36	12.30	34.46	0.26	1.62
OUTFLOW: ID= 1 (0031)	14.59	0.36	12.40	34.46	0.26	1.62

CALIB NASHYD (0016)	Area (ha)= 6.53 Curve Number (CN)= 74.0
ID= 1 DT=12.0 min	Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.275 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.327
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.294

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

CALIB STANDHYD (0018)	Area (ha)= 0.97
ID= 1 DT=12.0 min	Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.62	0.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	60.45	24.82
over (min)	12.00	12.00
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	0.10	0.02	0.124 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.12	18.32	39.30
TOTAL RAINFALL (mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT =	0.98	0.35	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0017)	Area (ha)= 2.34				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00			
		IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	1.29	1.05		
Dep. Storage	(mm)=	1.00	1.50		
Average Slope	(%)=	2.00	2.00		
Length	(m)=	30.00	20.00		
Mannings n	=	0.013	0.250		
Max.Eff.Inten.	(mm/hr)=	60.45	24.82		
over	(min)	12.00	12.00		
Storage Coeff.	(min)=	1.23 (ii)	9.36 (ii)		
Unit Hyd. Tpeak	(min)=	12.00	12.00		
Unit Hyd. peak	(cms)=	0.14	0.10		
				TOTALS	
PEAK FLOW	(cms)=	0.22	0.06	0.274 (iii)	
TIME TO PEAK	(hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME	(mm)=	51.12	18.32	36.36	
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12	
RUNOFF COEFFICIENT	=	0.98	0.35	0.70	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	6.53	0.275	12.00	15.33
	+ ID2= 2 (0017):	2.34	0.274	12.00	36.36
	ID = 3 (0019):	8.87	0.549	12.00	20.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0019):	8.87	0.549	12.00	20.88
	+ ID2= 2 (0018):	0.97	0.124	12.00	39.30
	ID = 1 (0019):	9.84	0.673	12.00	22.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0019):	9.84	0.673	12.00	22.69
	+ ID2= 2 (0031):	14.59	0.360	12.40	34.46
	ID = 3 (0032):	24.43	0.837	12.00	29.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4564
	0.1220	0.0863	0.8770	0.7894
	0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	0.837	12.00	29.72
OUTFLOW: ID= 1 (0022)	24.430	0.361	12.90	29.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.11
TIME SHIFT OF PEAK FLOW (min)= 54.00
MAXIMUM STORAGE USED (ha.m.)= 0.1600

CALIB					
NASHYD (0023)	Area (ha)= 10.18	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.27				
Unit Hyd Qpeak	(cms)= 1.440				
PEAK FLOW	(cms)= 0.323 (i)				
TIME TO PEAK	(hrs)= 12.000				
RUNOFF VOLUME	(mm)= 16.007				
TOTAL RAINFALL	(mm)= 52.121				
RUNOFF COEFFICIENT	= 0.307				

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

CALIB					
NASHYD (0025)	Area (ha)= 2.59	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.22				
Unit Hyd Qpeak	(cms)= 0.450				
PEAK FLOW	(cms)= 0.099 (i)				
TIME TO PEAK	(hrs)= 12.000				
RUNOFF VOLUME	(mm)= 15.706				
TOTAL RAINFALL	(mm)= 52.121				
RUNOFF COEFFICIENT	= 0.301				

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

CALIB					
NASHYD (0027)	Area (ha)= 1.61	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.13				
Unit Hyd Qpeak	(cms)= 0.473				
PEAK FLOW	(cms)= 0.072 (i)				
TIME TO PEAK	(hrs)= 12.000				
RUNOFF VOLUME	(mm)= 13.177				
TOTAL RAINFALL	(mm)= 52.121				
RUNOFF COEFFICIENT	= 0.253				

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

CALIB					
STANDHYD (0024)	Area (ha)= 6.71				
ID= 1 DT=12.0 min	Total Imp(%)= 71.00	Dir. Conn.(%)= 71.00			
		IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	4.76	1.95		
Dep. Storage	(mm)=	1.00	1.50		
Average Slope	(%)=	2.00	2.00		
Length	(m)=	30.00	20.00		
Mannings n	=	0.013	0.250		
Max.Eff.Inten.	(mm/hr)=	60.45	24.82		
over	(min)	12.00	12.00		
Storage Coeff.	(min)=	1.23 (ii)	9.36 (ii)		
Unit Hyd. Tpeak	(min)=	12.00	12.00		
Unit Hyd. peak	(cms)=	0.14	0.10		
				TOTALS	
PEAK FLOW	(cms)=	0.80	0.11	0.908 (iii)	
TIME TO PEAK	(hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME	(mm)=	51.12	18.32	41.61	
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12	
RUNOFF COEFFICIENT	=	0.98	0.35	0.80	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 74.0 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.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min | Area (ha)= 0.85 | Total Imp(%)= 28.00 | Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		60.45	24.82
over (min)		12.00	12.00
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10

		TOTALS
PEAK FLOW	(cms)=	0.074 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	27.50
TOTAL RAINFALL	(mm)=	52.12
RUNOFF COEFFICIENT	=	0.53

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.323	12.00	16.01
+ ID2= 2 (0024):	6.71	0.908	12.00	41.61
ID = 3 (0028):	16.89	1.231	12.00	26.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	1.231	12.00	26.18
+ ID2= 2 (0025):	2.59	0.099	12.00	15.71
ID = 1 (0028):	19.48	1.330	12.00	24.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	1.330	12.00	24.79
+ ID2= 2 (0027):	1.61	0.072	12.00	13.18
ID = 3 (0028):	21.09	1.402	12.00	23.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	1.402	12.00	23.90
+ ID2= 2 (0062):	0.85	0.074	12.00	27.50
ID = 1 (0028):	21.94	1.476	12.00	24.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.361	12.90	29.71
+ ID2= 2 (0028):	21.94	1.476	12.00	24.04
ID = 3 (0029):	46.37	1.601	12.00	27.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	1.601	12.00	27.04
OUTFLOW: ID= 1 (0030)	46.370	0.371	14.10	27.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.16
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 0.3759

CALIB NASHYD (0005) ID= 1 DT= 5.0 min | Area (ha)= 1.33 | Ia (mm)= 5.00 | U.H. Tp(hrs)= 0.13 | Curve Number (CN)= 74.0 | # of Linear Res.(N)= 3.00

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.51	6.083	1.02	12.083	10.67	18.08	0.76
0.167	0.51	6.167	1.02	12.167	10.67	18.17	0.76
0.250	0.51	6.250	1.02	12.250	8.23	18.25	0.76
0.333	0.51	6.333	1.02	12.333	6.60	18.33	0.76
0.417	0.51	6.417	1.02	12.417	6.25	18.42	0.76
0.500	0.51	6.500	1.02	12.500	4.83	18.50	0.76
0.583	0.51	6.583	1.02	12.583	4.83	18.58	0.76
0.667	0.51	6.667	1.02	12.667	4.62	18.67	0.76
0.750	0.51	6.750	1.02	12.750	4.57	18.75	0.76
0.833	0.51	6.833	1.02	12.833	4.06	18.83	0.76
0.917	0.51	6.917	1.02	12.917	3.30	18.92	0.76
1.000	0.51	7.000	1.02	13.000	3.30	19.00	0.76
1.083	0.51	7.083	1.02	13.083	2.79	19.08	0.76
1.167	0.51	7.167	1.02	13.167	2.79	19.17	0.76
1.250	0.51	7.250	1.02	13.250	2.79	19.25	0.76
1.333	0.51	7.333	1.02	13.333	2.79	19.33	0.76
1.417	0.51	7.417	1.02	13.417	2.79	19.42	0.76
1.500	0.51	7.500	1.02	13.500	2.79	19.50	0.76
1.583	0.51	7.583	1.02	13.583	2.79	19.58	0.76
1.667	0.51	7.667	1.02	13.667	2.79	19.67	0.76
1.750	0.51	7.750	1.02	13.750	2.79	19.75	0.76
1.833	0.51	7.833	1.02	13.833	2.79	19.83	0.76
1.917	0.51	7.917	1.02	13.917	2.79	19.92	0.76
2.000	0.51	8.000	1.02	14.000	2.79	20.00	0.76
2.083	0.51	8.083	1.52	14.083	1.52	20.08	0.51
2.167	0.51	8.167	1.52	14.167	1.52	20.17	0.51
2.250	0.51	8.250	1.52	14.250	1.52	20.25	0.51
2.333	0.51	8.333	1.52	14.333	1.52	20.33	0.51
2.417	0.51	8.417	1.52	14.417	1.52	20.42	0.51
2.500	0.51	8.500	1.52	14.500	1.52	20.50	0.51
2.583	0.51	8.583	1.52	14.583	1.52	20.58	0.51
2.667	0.51	8.667	1.52	14.667	1.52	20.67	0.51
2.750	0.51	8.750	1.52	14.750	1.52	20.75	0.51
2.833	0.51	8.833	1.52	14.833	1.52	20.83	0.51
2.917	0.51	8.917	1.52	14.917	1.52	20.92	0.51
3.000	0.51	9.000	1.52	15.000	1.52	21.00	0.51
3.083	0.51	9.083	1.52	15.083	1.52	21.08	0.51

3.167	0.51	9.167	1.52	15.167	1.52	21.17	0.51
3.250	0.51	9.250	1.52	15.250	1.52	21.25	0.51
3.333	0.51	9.333	1.52	15.333	1.52	21.33	0.51
3.417	0.51	9.417	1.52	15.417	1.52	21.42	0.51
3.500	0.51	9.500	1.52	15.500	1.52	21.50	0.51
3.583	0.51	9.583	1.52	15.583	1.52	21.58	0.51
3.667	0.51	9.667	1.52	15.667	1.52	21.67	0.51
3.750	0.51	9.750	1.52	15.750	1.52	21.75	0.51
3.833	0.51	9.833	1.52	15.833	1.52	21.83	0.51
3.917	0.51	9.917	1.52	15.917	1.52	21.92	0.51
4.000	0.51	10.000	1.52	16.000	1.52	22.00	0.51
4.083	1.02	10.083	3.05	16.083	1.02	22.08	0.51
4.167	1.02	10.167	3.05	16.167	1.02	22.17	0.51
4.250	1.02	10.250	3.05	16.250	1.02	22.25	0.51
4.333	1.02	10.333	3.05	16.333	1.02	22.33	0.51
4.417	1.02	10.417	3.05	16.417	1.02	22.42	0.51
4.500	1.02	10.500	3.05	16.500	1.02	22.50	0.51
4.583	1.02	10.583	3.05	16.583	1.02	22.58	0.51
4.667	1.02	10.667	3.05	16.667	1.02	22.67	0.51
4.750	1.02	10.750	3.05	16.750	1.02	22.75	0.51
4.833	1.02	10.833	3.05	16.833	1.02	22.83	0.51
4.917	1.02	10.917	3.05	16.917	1.02	22.92	0.51
5.000	1.02	11.000	3.05	17.000	1.02	23.00	0.51
5.083	1.02	11.083	4.06	17.083	1.02	23.08	0.51
5.167	1.02	11.167	4.06	17.167	1.02	23.17	0.51
5.250	1.02	11.250	5.13	17.250	1.02	23.25	0.51
5.333	1.02	11.333	5.84	17.333	1.02	23.33	0.51
5.417	1.02	11.417	7.31	17.417	1.02	23.42	0.51
5.500	1.02	11.500	13.21	17.500	1.02	23.50	0.51
5.583	1.02	11.583	13.21	17.583	1.02	23.58	0.51
5.667	1.02	11.667	25.80	17.667	1.02	23.67	0.51
5.750	1.02	11.750	28.96	17.750	1.02	23.75	0.51
5.833	1.02	11.833	41.55	17.833	1.02	23.83	0.51
5.917	1.02	11.917	60.45	17.917	1.02	23.92	0.51
6.000	1.02	12.000	60.45	18.000	1.02	24.00	0.51

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.066 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 16.121
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.309

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

CALIB
STANDHYD (0004)
ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	0.51	6.200	1.02	12.200	10.67	18.20	0.76
0.400	0.51	6.400	1.02	12.400	6.60	18.40	0.76
0.600	0.51	6.600	1.02	12.600	4.83	18.60	0.76
0.800	0.51	6.800	1.02	12.800	4.57	18.80	0.76
1.000	0.51	7.000	1.02	13.000	3.30	19.00	0.76
1.200	0.51	7.200	1.02	13.200	2.79	19.20	0.76
1.400	0.51	7.400	1.02	13.400	2.79	19.40	0.76
1.600	0.51	7.600	1.02	13.600	2.79	19.60	0.76
1.800	0.51	7.800	1.02	13.800	2.79	19.80	0.76
2.000	0.51	8.000	1.02	14.000	2.79	20.00	0.76
2.200	0.51	8.200	1.52	14.200	1.52	20.20	0.51
2.400	0.51	8.400	1.52	14.400	1.52	20.40	0.51
2.600	0.51	8.600	1.52	14.600	1.52	20.60	0.51
2.800	0.51	8.800	1.52	14.800	1.52	20.80	0.51
3.000	0.51	9.000	1.52	15.000	1.52	21.00	0.51
3.200	0.51	9.200	1.52	15.200	1.52	21.20	0.51
3.400	0.51	9.400	1.52	15.400	1.52	21.40	0.51
3.600	0.51	9.600	1.52	15.600	1.52	21.60	0.51
3.800	0.51	9.800	1.52	15.800	1.52	21.80	0.51
4.000	0.51	10.000	1.52	16.000	1.52	22.00	0.51
4.200	1.02	10.200	3.05	16.200	1.02	22.20	0.51
4.400	1.02	10.400	3.05	16.400	1.02	22.40	0.51
4.600	1.02	10.600	3.05	16.600	1.02	22.60	0.51
4.800	1.02	10.800	3.05	16.800	1.02	22.80	0.51
5.000	1.02	11.000	3.05	17.000	1.02	23.00	0.51
5.200	1.02	11.200	4.06	17.200	1.02	23.20	0.51
5.400	1.02	11.400	5.84	17.400	1.02	23.40	0.51
5.600	1.02	11.600	13.21	17.600	1.02	23.60	0.51
5.800	1.02	11.800	28.96	17.800	1.02	23.80	0.51
6.000	1.02	12.000	60.45	18.000	1.02	24.00	0.00

Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.16	0.03	0.185 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.02	18.26	39.22
TOTAL RAINFALL	(mm)=	52.02	52.02	52.02
RUNOFF COEFFICIENT	=	0.98	0.35	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0063)
ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.17	0.14	0.315 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.02	18.26	27.43
TOTAL RAINFALL	(mm)=	52.02	52.02	52.02
RUNOFF COEFFICIENT	=	0.98	0.35	0.53

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):		1.45	0.185	12.00	39.22
+ ID2= 2 (0005):		1.33	0.066	12.00	16.12
ID = 3 (0007):		2.78	0.251	12.00	28.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):		2.78	0.251	12.00	28.29
+ ID2= 2 (0063):		3.62	0.315	12.00	27.43
ID = 1 (0007):		6.40	0.566	12.00	27.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.566	12.00	27.89
OUTFLOW: ID= 1 (0033)	6.400	0.043	13.00	27.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.54
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.0999

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.04	13.00	27.79	0.09	0.82
OUTFLOW: ID= 1 (0034)	6.40	0.04	13.42	27.79	0.09	0.82

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.307 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.650
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.301

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.378 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.803
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.304

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.070 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.909
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.306

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	10.97	7.01	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	60.45	24.82	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.10	
			TOTALS
PEAK FLOW (cms)=	1.84	0.39	2.230 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.02	18.26	38.24
TOTAL RAINFALL (mm)=	52.02	52.02	52.02
RUNOFF COEFFICIENT =	0.98	0.35	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.67	0.54	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	60.45	24.82	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.10	
			TOTALS
PEAK FLOW (cms)=	0.11	0.03	0.142 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.02	18.26	36.28
TOTAL RAINFALL (mm)=	52.02	52.02	52.02
RUNOFF COEFFICIENT =	0.98	0.35	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)

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

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--------------------
| DUHYD     (0074) |
| Inlet Cap.=0.169 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.21      0.14     12.00    36.28
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.21      0.14     12.00    36.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0047) |   Area    (ha)=   1.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.96         0.54
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.16         0.03      0.191 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00        12.00
     RUNOFF VOLUME    (mm)=      51.02        18.26        39.22
     TOTAL RAINFALL   (mm)=      52.02        52.02        52.02
     RUNOFF COEFFICIENT   =       0.98         0.35         0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0072) |
| Inlet Cap.=0.363 |
| #of Inlets=    1 |
| Total(cms)=  0.4 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.50      0.19     12.00    39.22
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.50      0.19     12.00    39.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0035):     8.03   0.307    12.00    15.65
        + ID2= 2 (0036):    17.98   2.230    12.00    38.24
          ================================================
          ID = 3 (0040):    26.01   2.537    12.00    31.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):    26.01   2.537    12.00    31.27
        + ID2= 2 (0037):    10.64   0.378    12.00    15.80
          ================================================
          ID = 1 (0040):    36.65   2.915    12.00    26.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):    36.65   2.915    12.00    26.78
        + ID2= 2 (0038):     2.11   0.070    12.00    15.91
          ================================================
          ID = 3 (0040):    38.76   2.985    12.00    26.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0040):    38.76   2.985    12.00    26.19
        + ID2= 2 (0072):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0040):    38.76   2.985    12.00    26.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0074 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0040):    38.76   2.985    12.00    26.19
        + ID2= 2 (0074):     0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0040):    38.76   2.985    12.00    26.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0041) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):     6.40   0.042    13.42    27.79
        + ID2= 2 (0040):    38.76   2.985    12.00    26.19
          ================================================
          ID = 3 (0041):    45.16   3.001    12.00    26.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  3.1150      0.9004
                         1.2740     0.5550     |  3.6250      1.1600
                         2.2650     0.7154     |  3.9640      1.3570

                              AREA     QPEAK     TPEAK        R.V.
                              (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0041)    45.160     3.001     12.00       26.53
     OUTFLOW: ID= 1 (0043)    45.160     0.821     12.33       26.52

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 27.37
               TIME SHIFT OF PEAK FLOW        (min)= 20.00
               MAXIMUM  STORAGE   USED       (ha.m.)=  0.3582

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD    (0044) |   Area    (ha)=   3.28   Curve Number   (CN)= 74.0
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```
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.124 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  10.235
     TOTAL RAINFALL   (mm)=  52.019
     RUNOFF COEFFICIENT   =   0.197

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

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--------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.082 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  15.734
     TOTAL RAINFALL   (mm)=  52.019
     RUNOFF COEFFICIENT   =   0.302

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

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--------------------
| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      6.71         3.45
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      1.13         0.19      1.317 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     51.02        18.26      39.88
     TOTAL RAINFALL   (mm)=     52.02        52.02      52.02
     RUNOFF COEFFICIENT   =      0.98         0.35       0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.86         0.41
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.15         0.02      0.168 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     51.02        18.26      40.53
     TOTAL RAINFALL   (mm)=     52.02        52.02      52.02
     RUNOFF COEFFICIENT   =      0.98         0.35       0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.27      0.17     12.00    40.53
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.27      0.17     12.00    40.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0070) |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.38         1.12
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.23         0.06      0.293 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     51.02        18.26      36.28
     TOTAL RAINFALL   (mm)=     52.02        52.02      52.02
     RUNOFF COEFFICIENT   =      0.98         0.35       0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0071) |
| Inlet Cap.=0.550 |
| #of Inlets=    1 |
| Total(cms)=  0.6 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.50      0.29     12.00    36.28
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   2.50      0.29     12.00    36.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------        (ha)     (cms)    (hrs)      (mm)
          ID1= 1 (0044):     3.28   0.124    12.00    10.24
        + ID2= 2 (0045):    10.16   1.317    12.00    39.88
          ================================================
          ID = 3 (0048):    13.44   1.441    12.00    32.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	13.44	1.441	12.00	32.65
	+ ID2= 2 (0046):	2.21	0.082	12.00	15.73
	ID = 1 (0048):	15.65	1.522	12.00	30.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	15.65	1.522	12.00	30.26
	+ ID2= 2 (0069):	1.27	0.168	12.00	40.53
	ID = 3 (0048):	16.92	1.690	12.00	31.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	16.92	1.690	12.00	31.03
	+ ID2= 2 (0071):	2.50	0.293	12.00	36.28
	ID = 1 (0048):	19.42	1.983	12.00	31.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	19.42	1.983	12.00	31.70
	+ ID2= 2 (0072):	1.50	0.191	12.00	39.22
	ID = 3 (0048):	20.92	2.174	12.00	32.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.9630	0.3823
	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0048)	20.920	2.174	12.00	32.24
OUTFLOW: ID= 1 (0049)	20.920	0.700	12.20	32.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 32.19
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.2047

ROUTE PIPE (0050)		
IN= 2---> OUT= 1	PIPE Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 467.00
	Slope	(m/m)= 0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.70	12.20	32.24	0.35	2.10
OUTFLOW: ID= 1 (0050)	20.92	0.70	12.20	32.24	0.35	2.10

CALIB NASHYD (0054) ID= 1 DT=12.0 min				
	Area	(ha)= 1.34	Curve Number	(CN)= 74.0
	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)= 0.22		

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.051 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.650
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.301

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

CALIB NASHYD (0056) ID= 1 DT=12.0 min				
	Area	(ha)= 0.10	Curve Number	(CN)= 74.0
	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)= 0.05		

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 1.301
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.025

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

CALIB NASHYD (0058) ID= 1 DT=12.0 min				
	Area	(ha)= 2.51	Curve Number	(CN)= 74.0
	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)= 0.27		

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.949
TOTAL RAINFALL (mm)= 52.019
RUNOFF COEFFICIENT = 0.307

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

CALIB STANDHYD (0057) ID= 1 DT=12.0 min				
	Area	(ha)= 0.47		
	Total Imp	(%)= 70.00	Dir. Conn.	(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.33	0.14
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	60.45	24.82
over (min)	12.00	12.00

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     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.01          0.063 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.02        18.26          41.18
     TOTAL RAINFALL   (mm)=      52.02        52.02          52.02
     RUNOFF COEFFICIENT   =       0.98         0.35           0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0073) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0057):      0.47   0.063    12.00     41.18
       + ID2= 2 (0058):      2.51   0.080    12.00     15.95
         ================================================
         ID = 3 (0073):      2.98   0.143    12.00     19.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| DUHYD     (0066) |
| Inlet Cap.=0.181 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK     R.V.
-------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.98      0.14     12.00    19.93
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   2.98      0.14     12.00    19.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0053)  |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min  |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.14          0.694 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.02        18.26          36.60
     TOTAL RAINFALL   (mm)=      52.02        52.02          52.02
     RUNOFF COEFFICIENT   =       0.98         0.35           0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0055)  |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.11         0.11          0.226 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.02        18.26          26.45
     TOTAL RAINFALL   (mm)=      52.02        52.02          52.02
     RUNOFF COEFFICIENT   =       0.98         0.35           0.51

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0065)  |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.11         0.11          0.226 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.02        18.26          26.45
     TOTAL RAINFALL   (mm)=      52.02        52.02          52.02
     RUNOFF COEFFICIENT   =       0.98         0.35           0.51

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0053):      5.86   0.694    12.00     36.60
       + ID2= 2 (0054):      1.34   0.051    12.00     15.65
         ================================================
         ID = 3 (0051):      7.20   0.745    12.00     32.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0051):      7.20   0.745    12.00     32.70
       + ID2= 2 (0055):      2.71   0.226    12.00     26.45
         ================================================
         ID = 1 (0051):      9.91   0.971    12.00     30.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0051):     9.91   0.971    12.00    30.99
        + ID2= 2 (0056):     0.10   0.001    12.00     1.30
          ================================================
          ID = 3 (0051):    10.01   0.972    12.00    30.70

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0051):    10.01   0.972    12.00    30.70
        + ID2= 2 (0065):     2.71   0.226    12.00    26.45
          ================================================
          ID = 1 (0051):    12.72   1.198    12.00    29.79

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0051):    12.72   1.198    12.00    29.79
        + ID2= 2 (0066):     2.98   0.143    12.00    19.93
          ================================================
          ID = 3 (0051):    15.70   1.341    12.00    27.92

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0051):    15.70   1.341    12.00    27.92
        + ID2= 2 (0069):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0051):    15.70   1.341    12.00    27.92

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0060) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0050):    20.92   0.700    12.20    32.24
        + ID2= 2 (0051):    15.70   1.341    12.00    27.92
          ================================================
          ID = 3 (0060):    36.62   1.871    12.00    30.39

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)     |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.5100     0.3577
                         0.2970     0.1233     |   0.6800     0.7154
                         0.4250     0.2220     |   0.7930     1.1964

                                AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
    INFLOW : ID= 2 (0060)      36.620     1.871     12.00      30.39
    OUTFLOW: ID= 1 (0061)      36.620     0.505     13.20      30.39

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 26.98
                TIME SHIFT OF PEAK FLOW       (min)= 72.00
                MAXIMUM  STORAGE   USED      (ha.m.)=  0.3497

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**************************
** SIMULATION NUMBER:   2 **
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|    READ STORM    |     Filename: C:\Users\DMcBrayne\AppD
|                  |               ata\Local\Temp\
|                  |               122dfadb-b082-4939-8279-0906fc8de536\47b56346
| Ptotal= 62.43 mm |     Comments: FIVE YR SCS STORM  WITH A TWELVE MINUTE
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```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	0.76	6.20	1.27	12.20	12.19	18.20	1.27
0.40	0.76	6.40	1.27	12.40	7.62	18.40	1.27
0.60	0.76	6.60	1.27	12.60	5.59	18.60	1.27
0.80	0.76	6.80	1.27	12.80	5.08	18.80	1.27
1.00	0.76	7.00	1.27	13.00	3.81	19.00	1.27
1.20	0.76	7.20	1.27	13.20	3.05	19.20	1.02
1.40	0.76	7.40	1.27	13.40	3.05	19.40	1.02
1.60	0.76	7.60	1.27	13.60	3.05	19.60	1.02
1.80	0.76	7.80	1.27	13.80	3.05	19.80	1.02
2.00	0.76	8.00	1.27	14.00	3.05	20.00	1.02
2.20	0.76	8.20	1.78	14.20	1.78	20.20	1.02
2.40	0.76	8.40	1.78	14.40	1.78	20.40	1.02
2.60	0.76	8.60	1.78	14.60	1.78	20.60	1.02
2.80	0.76	8.80	1.78	14.80	1.78	20.80	1.02
3.00	0.76	9.00	1.78	15.00	1.78	21.00	1.02
3.20	0.76	9.20	1.78	15.20	1.78	21.20	0.76
3.40	0.76	9.40	1.78	15.40	1.78	21.40	0.76
3.60	0.76	9.60	1.78	15.60	1.78	21.60	0.76
3.80	0.76	9.80	1.78	15.80	1.78	21.80	0.76
4.00	0.76	10.00	1.78	16.00	1.78	22.00	0.76
4.20	1.27	10.20	3.30	16.20	1.27	22.20	0.76
4.40	1.27	10.40	3.30	16.40	1.27	22.40	0.76
4.60	1.27	10.60	3.30	16.60	1.27	22.60	0.76
4.80	1.27	10.80	3.30	16.80	1.27	22.80	0.76
5.00	1.27	11.00	3.30	17.00	1.27	23.00	0.76
5.20	1.27	11.20	4.57	17.20	1.27	23.20	0.76
5.40	1.27	11.40	6.60	17.40	1.27	23.40	0.76
5.60	1.27	11.60	15.24	17.60	1.27	23.60	0.76
5.80	1.27	11.80	33.27	17.80	1.27	23.80	0.76
6.00	1.27	12.00	69.60	18.00	1.27	24.00	0.76

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| CALIB            |
| NASHYD    (0011) |  Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |  Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.053 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  20.584
     TOTAL RAINFALL   (mm)=  62.433
     RUNOFF COEFFICIENT   =   0.330

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

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

-------------------
| CALIB            |
| STANDHYD  (0010) |  Area     (ha)=   3.87
|ID= 1 DT=12.0 min |  Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36          1.51
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      69.60         32.00
           over      (min)=      12.00         12.00
     Storage Coeff.  (min)=       1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.46          0.11        0.568 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00        12.00
     RUNOFF VOLUME    (mm)=      61.43         24.72        47.12
     TOTAL RAINFALL   (mm)=      62.43         62.43        62.43
     RUNOFF COEFFICIENT   =       0.98          0.40         0.75
```

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0012)	Area (ha)= 6.86	
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		3.78 (ii)	11.13 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.09

		TOTALS
PEAK FLOW	(cms)=	0.79 0.18 0.971 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	61.43 24.72 47.12
TOTAL RAINFALL	(mm)=	62.43 62.43 62.43
RUNOFF COEFFICIENT	=	0.98 0.40 0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0064)	Area (ha)= 2.95	
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.14 0.16 0.306 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	61.43 24.72 33.90
TOTAL RAINFALL	(mm)=	62.43 62.43 62.43
RUNOFF COEFFICIENT	=	0.98 0.40 0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0010):	3.87	0.568	12.00	47.12
	+ ID2= 2 (0011):	0.91	0.053	12.00	20.58
	ID = 3 (0013):	4.78	0.621	12.00	42.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0013):	4.78	0.621	12.00	42.06
	+ ID2= 2 (0012):	6.86	0.971	12.00	47.12
	ID = 1 (0013):	11.64	1.592	12.00	45.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0013):	11.64	1.592	12.00	45.04
	+ ID2= 2 (0064):	2.95	0.306	12.00	33.90
	ID = 3 (0013):	14.59	1.898	12.00	42.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	1.898	12.00	42.79
OUTFLOW: ID= 1 (0021)	14.590	0.410	12.30	42.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.62
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.2511

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.41	12.30	42.77	0.28	1.67
OUTFLOW: ID= 1 (0031)	14.59	0.41	12.30	42.77	0.28	1.67

```
| CALIB              |
| NASHYD    (0016)   |   Area    (ha)=   6.53   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.365 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  21.169
     TOTAL RAINFALL   (mm)=  62.433
     RUNOFF COEFFICIENT   =   0.339

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

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0018)   |   Area    (ha)=   0.97
|ID= 1 DT=12.0 min   |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     0.62          0.35
     Dep. Storage     (mm)=     1.00          1.50
     Average Slope     (%)=     2.00          2.00
     Length            (m)=    30.00         20.00
     Mannings n           =    0.013         0.250

     Max.Eff.Inten.(mm/hr)=    69.60         32.00
                over (min)     12.00         12.00
     Storage Coeff.  (min)=     1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=    12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.11
                                                         *TOTALS*
     PEAK FLOW       (cms)=     0.12          0.03          0.146 (iii)
     TIME TO PEAK    (hrs)=    12.00         12.00         12.00
     RUNOFF VOLUME    (mm)=    61.43         24.72         48.21
     TOTAL RAINFALL   (mm)=    62.43         62.43         62.43
     RUNOFF COEFFICIENT   =     0.98          0.40          0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0017)   |   Area    (ha)=   2.34
|ID= 1 DT=12.0 min   |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     1.29          1.05
     Dep. Storage     (mm)=     1.00          1.50
     Average Slope     (%)=     2.00          2.00
     Length            (m)=    30.00         20.00
     Mannings n           =    0.013         0.250

     Max.Eff.Inten.(mm/hr)=    69.60         32.00
                over (min)     12.00         12.00
     Storage Coeff.  (min)=     1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=    12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.11
                                                         *TOTALS*
     PEAK FLOW       (cms)=     0.25          0.08          0.327 (iii)
     TIME TO PEAK    (hrs)=    12.00         12.00         12.00
     RUNOFF VOLUME    (mm)=    61.43         24.72         44.91
     TOTAL RAINFALL   (mm)=    62.43         62.43         62.43
     RUNOFF COEFFICIENT   =     0.98          0.40          0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD   (0019) |
|  1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0016):     6.53   0.365    12.00    21.17
        + ID2= 2 (0017):     2.34   0.327    12.00    44.91
          ===============================================
          ID = 3 (0019):     8.87   0.691    12.00    27.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0019) |
|  3 +  2 =  1     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0019):     8.87   0.691    12.00    27.43
        + ID2= 2 (0018):     0.97   0.146    12.00    48.21
          ===============================================
          ID = 1 (0019):     9.84   0.837    12.00    29.48

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0032) |
|  1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):     9.84   0.837    12.00    29.48
        + ID2= 2 (0031):    14.59   0.410    12.30    42.77
          ===============================================
          ID = 3 (0032):    24.43   1.068    12.00    37.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0022) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |    (cms)     (ha.m.)
                          0.0000     0.0000   |    0.6510     0.4564
                          0.1220     0.0863   |    0.8770     0.7894
                          0.3620     0.1603   |    0.0000     0.0000

                              AREA      QPEAK      TPEAK       R.V.
                              (ha)      (cms)      (hrs)       (mm)
     INFLOW : ID= 2 (0032)    24.430     1.068      12.00      37.42
     OUTFLOW: ID= 1 (0022)    24.430     0.401      13.10      37.41

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 37.53
                   TIME SHIFT OF PEAK FLOW         (min)= 66.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.2002

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| NASHYD    (0023)   |   Area    (ha)=  10.18   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   1.440

     PEAK FLOW       (cms)=   0.432 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  22.108
     TOTAL RAINFALL   (mm)=  62.433
     RUNOFF COEFFICIENT   =   0.354

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

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| NASHYD    (0025)   |   Area    (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.132 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  21.692
     TOTAL RAINFALL   (mm)=  62.433
     RUNOFF COEFFICIENT   =   0.347

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB             |
| NASHYD    (0027)  |   Area    (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

    Unit Hyd Qpeak  (cms)=   0.473

    PEAK FLOW       (cms)=   0.095 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)=  18.199
    TOTAL RAINFALL   (mm)=  62.433
    RUNOFF COEFFICIENT   =   0.292

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

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--------------------
| CALIB             |
| STANDHYD  (0024)  |   Area    (ha)=   6.71
|ID= 1 DT=12.0 min  |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       4.76         1.95
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      30.00        20.00
    Mannings n           =      0.013        0.250

    Max.Eff.Inten.(mm/hr)=      69.60        32.00
               over (min)       12.00        12.00
    Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
    Unit Hyd. Tpeak (min)=      12.00        12.00
    Unit Hyd. peak  (cms)=       0.14         0.11
                                                         *TOTALS*
    PEAK FLOW       (cms)=       0.92         0.14          1.065 (iii)
    TIME TO PEAK    (hrs)=      12.00        12.00         12.00
    RUNOFF VOLUME    (mm)=      61.43        24.72         50.79
    TOTAL RAINFALL   (mm)=      62.43        62.43         62.43
    RUNOFF COEFFICIENT   =       0.98         0.40          0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

------------------------------------------------------------------------------
--------------------
| CALIB             |
| STANDHYD  (0062)  |   Area    (ha)=   0.85
|ID= 1 DT=12.0 min  |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.24         0.61
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      30.00        20.00
    Mannings n           =      0.013        0.250

    Max.Eff.Inten.(mm/hr)=      69.60        32.00
               over (min)       12.00        12.00
    Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
    Unit Hyd. Tpeak (min)=      12.00        12.00
    Unit Hyd. peak  (cms)=       0.14         0.11
                                                         *TOTALS*
    PEAK FLOW       (cms)=       0.05         0.05          0.091 (iii)
    TIME TO PEAK    (hrs)=      12.00        12.00         12.00
    RUNOFF VOLUME    (mm)=      61.43        24.72         35.00
    TOTAL RAINFALL   (mm)=      62.43        62.43         62.43
    RUNOFF COEFFICIENT   =       0.98         0.40          0.56

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0028)  |
|  1 +  2 =  3      |           AREA    QPEAK    TPEAK     R.V.
--------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0023):    10.18   0.432    12.00    22.11
        + ID2= 2 (0024):     6.71   1.065    12.00    50.79
          ==================================================
          ID = 3 (0028):    16.89   1.497    12.00    33.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0028)  |
|  3 +  2 =  1      |           AREA    QPEAK    TPEAK     R.V.
--------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0028):    16.89   1.497    12.00    33.50
        + ID2= 2 (0025):     2.59   0.132    12.00    21.69
          ==================================================
          ID = 1 (0028):    19.48   1.629    12.00    31.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0028)  |
|  1 +  2 =  3      |           AREA    QPEAK    TPEAK     R.V.
--------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0028):    19.48   1.629    12.00    31.93
        + ID2= 2 (0027):     1.61   0.095    12.00    18.20
          ==================================================
          ID = 3 (0028):    21.09   1.724    12.00    30.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0028)  |
|  3 +  2 =  1      |           AREA    QPEAK    TPEAK     R.V.
--------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0028):    21.09   1.724    12.00    30.88
        + ID2= 2 (0062):     0.85   0.091    12.00    35.00
          ==================================================
          ID = 1 (0028):    21.94   1.815    12.00    31.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0029)  |
|  1 +  2 =  3      |           AREA    QPEAK    TPEAK     R.V.
--------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0022):    24.43   0.401    13.10    37.41
        + ID2= 2 (0028):    21.94   1.815    12.00    31.04
          ==================================================
          ID = 3 (0029):    46.37   2.010    12.00    34.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| RESERVOIR (0030)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
                          0.0000     0.0000    |   1.3030     1.3940
                          0.4380     0.4440    |   1.5000     1.8008
                          0.9910     1.0000    |   1.7560     2.3930

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0029)    46.370     2.010     12.00      34.41
     OUTFLOW: ID= 1 (0030)    46.370     0.453     14.20      34.41

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 22.54
                  TIME SHIFT OF PEAK FLOW         (min)=132.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4592

------------------------------------------------------------------------------
--------------------
| CALIB             |
| NASHYD    (0005)  |   Area    (ha)=   1.33   Curve Number   (CN)= 74.0
```

|ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.76	6.083	1.27	12.083	12.20	18.08	1.27
0.167	0.76	6.167	1.27	12.167	12.19	18.17	1.27
0.250	0.76	6.250	1.27	12.250	9.45	18.25	1.27
0.333	0.76	6.333	1.27	12.333	7.62	18.33	1.27
0.417	0.76	6.417	1.27	12.417	7.21	18.42	1.27
0.500	0.76	6.500	1.27	12.500	5.59	18.50	1.27
0.583	0.76	6.583	1.27	12.583	5.59	18.58	1.27
0.667	0.76	6.667	1.27	12.667	5.18	18.67	1.27
0.750	0.76	6.750	1.27	12.750	5.08	18.75	1.27
0.833	0.76	6.833	1.27	12.833	4.57	18.83	1.27
0.917	0.76	6.917	1.27	12.917	3.81	18.92	1.27
1.000	0.76	7.000	1.27	13.000	3.81	19.00	1.27
1.083	0.76	7.083	1.27	13.083	3.05	19.08	1.02
1.167	0.76	7.167	1.27	13.167	3.05	19.17	1.02
1.250	0.76	7.250	1.27	13.250	3.05	19.25	1.02
1.333	0.76	7.333	1.27	13.333	3.05	19.33	1.02
1.417	0.76	7.417	1.27	13.417	3.05	19.42	1.02
1.500	0.76	7.500	1.27	13.500	3.05	19.50	1.02
1.583	0.76	7.583	1.27	13.583	3.05	19.58	1.02
1.667	0.76	7.667	1.27	13.667	3.05	19.67	1.02
1.750	0.76	7.750	1.27	13.750	3.05	19.75	1.02
1.833	0.76	7.833	1.27	13.833	3.05	19.83	1.02
1.917	0.76	7.917	1.27	13.917	3.05	19.92	1.02
2.000	0.76	8.000	1.27	14.000	3.05	20.00	1.02
2.083	0.76	8.083	1.78	14.083	1.78	20.08	1.02
2.167	0.76	8.167	1.78	14.167	1.78	20.17	1.02
2.250	0.76	8.250	1.78	14.250	1.78	20.25	1.02
2.333	0.76	8.333	1.78	14.333	1.78	20.33	1.02
2.417	0.76	8.417	1.78	14.417	1.78	20.42	1.02
2.500	0.76	8.500	1.78	14.500	1.78	20.50	1.02
2.583	0.76	8.583	1.78	14.583	1.78	20.58	1.02
2.667	0.76	8.667	1.78	14.667	1.78	20.67	1.02
2.750	0.76	8.750	1.78	14.750	1.78	20.75	1.02
2.833	0.76	8.833	1.78	14.833	1.78	20.83	1.02
2.917	0.76	8.917	1.78	14.917	1.78	20.92	1.02
3.000	0.76	9.000	1.78	15.000	1.78	21.00	1.02
3.083	0.76	9.083	1.78	15.083	1.78	21.08	0.76
3.167	0.76	9.167	1.78	15.167	1.78	21.17	0.76
3.250	0.76	9.250	1.78	15.250	1.78	21.25	0.76
3.333	0.76	9.333	1.78	15.333	1.78	21.33	0.76
3.417	0.76	9.417	1.78	15.417	1.78	21.42	0.76
3.500	0.76	9.500	1.78	15.500	1.78	21.50	0.76
3.583	0.76	9.583	1.78	15.583	1.78	21.58	0.76
3.667	0.76	9.667	1.78	15.667	1.78	21.67	0.76
3.750	0.76	9.750	1.78	15.750	1.78	21.75	0.76
3.833	0.76	9.833	1.78	15.833	1.78	21.83	0.76
3.917	0.76	9.917	1.78	15.917	1.78	21.92	0.76
4.000	0.76	10.000	1.78	16.000	1.78	22.00	0.76
4.083	1.27	10.083	3.30	16.083	1.27	22.08	0.76
4.167	1.27	10.167	3.30	16.167	1.27	22.17	0.76
4.250	1.27	10.250	3.30	16.250	1.27	22.25	0.76
4.333	1.27	10.333	3.30	16.333	1.27	22.33	0.76
4.417	1.27	10.417	3.30	16.417	1.27	22.42	0.76
4.500	1.27	10.500	3.30	16.500	1.27	22.50	0.76
4.583	1.27	10.583	3.30	16.583	1.27	22.58	0.76
4.667	1.27	10.667	3.30	16.667	1.27	22.67	0.76
4.750	1.27	10.750	3.30	16.750	1.27	22.75	0.76
4.833	1.27	10.833	3.30	16.833	1.27	22.83	0.76
4.917	1.27	10.917	3.30	16.917	1.27	22.92	0.76
5.000	1.27	11.000	3.30	17.000	1.27	23.00	0.76
5.083	1.27	11.083	4.57	17.083	1.27	23.08	0.76
5.167	1.27	11.167	4.57	17.167	1.27	23.17	0.76
5.250	1.27	11.250	5.79	17.250	1.27	23.25	0.76
5.333	1.27	11.333	6.60	17.333	1.27	23.33	0.76
5.417	1.27	11.417	8.33	17.417	1.27	23.42	0.76
5.500	1.27	11.500	15.24	17.500	1.27	23.50	0.76
5.583	1.27	11.583	15.24	17.583	1.27	23.58	0.76
5.667	1.27	11.667	29.67	17.667	1.27	23.67	0.76
5.750	1.27	11.750	33.27	17.750	1.27	23.75	0.76
5.833	1.27	11.833	47.80	17.833	1.27	23.83	0.76
5.917	1.27	11.917	69.60	17.917	1.27	23.92	0.76
6.000	1.27	12.000	69.60	18.000	1.27	24.00	0.76

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 22.266
TOTAL RAINFALL (mm)= 62.433
RUNOFF COEFFICIENT = 0.357

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

CALIB	STANDHYD (0004)	ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	0.76	6.200	1.27	12.200	12.19	18.20	1.27
0.400	0.76	6.400	1.27	12.400	7.62	18.40	1.27
0.600	0.76	6.600	1.27	12.600	5.59	18.60	1.27
0.800	0.76	6.800	1.27	12.800	5.08	18.80	1.27
1.000	0.76	7.000	1.27	13.000	3.81	19.00	1.27
1.200	0.76	7.200	1.27	13.200	3.05	19.20	1.02
1.400	0.76	7.400	1.27	13.400	3.05	19.40	1.02
1.600	0.76	7.600	1.27	13.600	3.05	19.60	1.02
1.800	0.76	7.800	1.27	13.800	3.05	19.80	1.02
2.000	0.76	8.000	1.27	14.000	3.05	20.00	1.02
2.200	0.76	8.200	1.78	14.200	1.78	20.20	1.02
2.400	0.76	8.400	1.78	14.400	1.78	20.40	1.02
2.600	0.76	8.600	1.78	14.600	1.78	20.60	1.02
2.800	0.76	8.800	1.78	14.800	1.78	20.80	1.02
3.000	0.76	9.000	1.78	15.000	1.78	21.00	1.02
3.200	0.76	9.200	1.78	15.200	1.78	21.20	0.76
3.400	0.76	9.400	1.78	15.400	1.78	21.40	0.76
3.600	0.76	9.600	1.78	15.600	1.78	21.60	0.76
3.800	0.76	9.800	1.78	15.800	1.78	21.80	0.76
4.000	0.76	10.000	1.78	16.000	1.78	22.00	0.76
4.200	1.27	10.200	3.30	16.200	1.27	22.20	0.76
4.400	1.27	10.400	3.30	16.400	1.27	22.40	0.76
4.600	1.27	10.600	3.30	16.600	1.27	22.60	0.76
4.800	1.27	10.800	3.30	16.800	1.27	22.80	0.76
5.000	1.27	11.000	3.30	17.000	1.27	23.00	0.76
5.200	1.27	11.200	4.57	17.200	1.27	23.20	0.76
5.400	1.27	11.400	6.60	17.400	1.27	23.40	0.76
5.600	1.27	11.600	15.24	17.600	1.27	23.60	0.76
5.800	1.27	11.800	33.27	17.800	1.27	23.80	0.76
6.000	1.27	12.000	69.59	18.000	1.27	24.00	0.00

				TOTALS
Max.Eff.Inten.	(mm/hr)=	69.59	32.00	
	over (min)	12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
PEAK FLOW	(cms)=	0.18	0.04	0.218 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	48.08
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	STANDHYD (0063)	ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00

Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		69.59	32.00	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.20	0.19	0.389 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	34.89
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.218	12.00	48.08
+ ID2= 2 (0005):	1.33	0.088	12.00	22.27
ID = 3 (0007):	2.78	0.306	12.00	35.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.306	12.00	35.87
+ ID2= 2 (0063):	3.62	0.389	12.00	34.89
ID = 1 (0007):	6.40	0.694	12.00	35.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.694	12.00	35.42
OUTFLOW: ID= 1 (0033)	6.400	0.052	13.00	35.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.52
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1223

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.05	13.00	35.32	0.10	0.85
OUTFLOW: ID= 1 (0034)	6.40	0.05	13.33	35.32	0.10	0.85

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.409 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 21.600
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.347

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.505 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 21.811
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.350

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.093 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 21.957
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.353

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.59	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)

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     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       2.12         0.52          2.639 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=      61.28        24.62         46.98
     TOTAL RAINFALL   (mm)=      62.28        62.28         62.28
     RUNOFF COEFFICIENT   =       0.98         0.40          0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB             |
| STANDHYD  (0039)  |   Area    (ha)=   1.21
|ID= 1 DT=12.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.67         0.54
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     69.59        32.00
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.13         0.04          0.169 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     61.28        24.62         44.78
     TOTAL RAINFALL   (mm)=     62.28        62.28         62.28
     RUNOFF COEFFICIENT   =      0.98         0.40          0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0074)  |
| Inlet Cap.=0.169  |
| #of Inlets=    1  |
| Total(cms)=  0.2  |
-------------------          AREA     QPEAK     TPEAK     R.V.
                              (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):     1.21      0.17     12.00    44.78
     ================================================
     MAJOR SYS.(ID= 2):     0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):     1.21      0.17     12.00    44.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB             |
| STANDHYD  (0047)  |   Area    (ha)=   1.50
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.96         0.54
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     69.59        32.00
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.19         0.04          0.226 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     61.28        24.62         48.08
     TOTAL RAINFALL   (mm)=     62.28        62.28         62.28
     RUNOFF COEFFICIENT   =      0.98         0.40          0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0072)  |
| Inlet Cap.=0.363  |
| #of Inlets=    1  |
| Total(cms)=  0.4  |
-------------------          AREA     QPEAK     TPEAK     R.V.
                              (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):     1.50      0.23     12.00    48.08
     ================================================
     MAJOR SYS.(ID= 2):     0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):     1.50      0.23     12.00    48.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0035):      8.03   0.409    12.00    21.60
        + ID2= 2 (0036):     17.98   2.639    12.00    46.98
          ================================================
          ID = 3 (0040):     26.01   3.047    12.00    39.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0040)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):     26.01   3.047    12.00    39.15
        + ID2= 2 (0037):     10.64   0.505    12.00    21.81
          ================================================
          ID = 1 (0040):     36.65   3.552    12.00    34.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):     36.65   3.552    12.00    34.11
        + ID2= 2 (0038):      2.11   0.093    12.00    21.96
          ================================================
          ID = 3 (0040):     38.76   3.645    12.00    33.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0040)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0040):     38.76   3.645    12.00    33.45
        + ID2= 2 (0072):      0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0040):     38.76   3.645    12.00    33.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
```

```
*** W A R N I N G :  HYDROGRAPH 0074 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
         ID1= 1 (0040):    38.76   3.645    12.00    33.45
       + ID2= 2 (0074):     0.00   0.000     0.00     0.00
         ================================================
         ID = 3 (0040):    38.76   3.645    12.00    33.45

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

ADD HYD (0041)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0034):	6.40	0.052	13.33	35.32
+ ID2= 2 (0040):	38.76	3.645	12.00	33.45
ID = 3 (0041):	45.16	3.665	12.00	33.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	3.1150	0.9004
	1.2740	0.5550	3.6250	1.1600
	2.2650	0.7154	3.9640	1.3570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0041)	45.160	3.665	12.00	33.86
OUTFLOW: ID= 1 (0043)	45.160	1.008	12.33	33.85

```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 27.51
TIME SHIFT OF PEAK FLOW        (min)= 20.00
MAXIMUM  STORAGE   USED        (ha.m.)=  0.4399
```

CALIB					
NASHYD (0044)	Area	(ha)=	3.28	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.10		

```
    Unit Hyd Qpeak  (cms)=   1.253

    PEAK FLOW       (cms)=   0.163 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)=  14.127
    TOTAL RAINFALL   (mm)=  62.281
    RUNOFF COEFFICIENT   =   0.227

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

CALIB					
NASHYD (0046)	Area	(ha)=	2.21	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.23		

```
    Unit Hyd Qpeak  (cms)=   0.367

    PEAK FLOW       (cms)=   0.109 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)=  21.715
    TOTAL RAINFALL   (mm)=  62.281
    RUNOFF COEFFICIENT   =   0.349

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

CALIB					
STANDHYD (0045)	Area	(ha)=	10.16		
ID= 1 DT=12.0 min	Total Imp	(%)=	66.00	Dir. Conn.	(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.71	3.45
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.59	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

			TOTALS
PEAK FLOW	(cms)=	1.30	0.26	1.552 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	48.82
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.78

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.
```

CALIB					
STANDHYD (0059)	Area	(ha)=	1.27		
ID= 1 DT=12.0 min	Total Imp	(%)=	68.00	Dir. Conn.	(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.59	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

			TOTALS
PEAK FLOW	(cms)=	0.17	0.03	0.197 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	49.55
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.80

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.
```

DUHYD (0069)					
Inlet Cap.=0.320					
#of Inlets= 1					
Total(cms)= 0.3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
TOTAL HYD.(ID= 1):	1.27	0.20	12.00	49.55	
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00	
MINOR SYS.(ID= 3):	1.27	0.20	12.00	49.55	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0070)	Area	(ha)=	2.50		
ID= 1 DT=12.0 min	Total Imp	(%)=	55.00	Dir. Conn.	(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.59	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)

Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
			TOTALS
PEAK FLOW (cms)=	0.27	0.08	0.349 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	61.28	24.62	44.78
TOTAL RAINFALL (mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT =	0.98	0.40	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)
Inlet Cap.=0.550
#of Inlets= 1
Total(cms)= 0.6

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.35	12.00	44.78
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.35	12.00	44.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.163	12.00	14.13
+ ID2= 2 (0045):	10.16	1.552	12.00	48.82
ID = 3 (0048):	13.44	1.715	12.00	40.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	1.715	12.00	40.35
+ ID2= 2 (0046):	2.21	0.109	12.00	21.72
ID = 1 (0048):	15.65	1.823	12.00	37.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	1.823	12.00	37.72
+ ID2= 2 (0069):	1.27	0.197	12.00	49.55
ID = 3 (0048):	16.92	2.020	12.00	38.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	2.020	12.00	38.61
+ ID2= 2 (0071):	2.50	0.349	12.00	44.78
ID = 1 (0048):	19.42	2.369	12.00	39.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.42	2.369	12.00	39.40
+ ID2= 2 (0072):	1.50	0.226	12.00	48.08
ID = 3 (0048):	20.92	2.595	12.00	40.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.9630	0.3823
0.5430	0.1233	1.3030	0.6907
0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	2.595	12.00	40.02
OUTFLOW: ID= 1 (0049)	20.920	0.779	12.20	40.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 30.04
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.2476

ROUTE PIPE (0050)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.78	12.20	40.02	0.37	2.16
OUTFLOW: ID= 1 (0050)	20.92	0.78	12.20	40.02	0.37	2.16

CALIB
NASHYD (0054)
ID= 1 DT=12.0 min

Area (ha)=	1.34	Curve Number (CN)=	74.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.22		

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.068 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 21.600
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.347

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

CALIB

NASHYD (0056)	ID= 1 DT=12.0 min	Area (ha)= 0.10	Ia (mm)= 5.00	U.H. Tp(hrs)= 0.05	Curve Number (CN)= 74.0	# of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 1.926
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.031

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

CALIB NASHYD (0058)	ID= 1 DT=12.0 min	Area (ha)= 2.51	Ia (mm)= 5.00	U.H. Tp(hrs)= 0.27	Curve Number (CN)= 74.0	# of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.107 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 22.013
TOTAL RAINFALL (mm)= 62.281
RUNOFF COEFFICIENT = 0.353

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

CALIB STANDHYD (0057)	ID= 1 DT=12.0 min	Area (ha)= 0.47	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.59	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.06	0.01	0.074 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	50.27
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0073) | 1 + 2 = 3 |

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):		0.47	0.074	12.00	50.27
+ ID2= 2 (0058):		2.51	0.107	12.00	22.01
ID = 3 (0073):		2.98	0.181	12.00	26.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| DUHYD (0066) | Inlet Cap.=0.181 | #of Inlets= 1 | Total(cms)= 0.2 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.18	12.00	26.47
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.18	12.00	26.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0053)	ID= 1 DT=12.0 min	Area (ha)= 5.86	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.59	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.63	0.19	0.825 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	45.15
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0055)	ID= 1 DT=12.0 min	Area (ha)= 2.71	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.59	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.13	0.15	0.281 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.28	24.62	33.79
TOTAL RAINFALL	(mm)=	62.28	62.28	62.28
RUNOFF COEFFICIENT	=	0.98	0.40	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0065)	ID= 1 DT=12.0 min	Area (ha)= 2.71	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.59	32.00
over (min)		12.00	12.00

```
     Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.15          0.281 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=      61.28        24.62         33.79
     TOTAL RAINFALL   (mm)=      62.28        62.28         62.28
     RUNOFF COEFFICIENT   =       0.98         0.40          0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0053):     5.86   0.825    12.00    45.15
       + ID2= 2 (0054):     1.34   0.068    12.00    21.60
         ================================================
         ID = 3 (0051):     7.20   0.893    12.00    40.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0051):     7.20   0.893    12.00    40.77
       + ID2= 2 (0055):     2.71   0.281    12.00    33.79
         ================================================
         ID = 1 (0051):     9.91   1.174    12.00    38.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0051):     9.91   1.174    12.00    38.86
       + ID2= 2 (0056):     0.10   0.001    12.00     1.93
         ================================================
         ID = 3 (0051):    10.01   1.175    12.00    38.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0051):    10.01   1.175    12.00    38.49
       + ID2= 2 (0065):     2.71   0.281    12.00    33.79
         ================================================
         ID = 1 (0051):    12.72   1.456    12.00    37.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0051):    12.72   1.456    12.00    37.49
       + ID2= 2 (0066):     2.98   0.181    12.00    26.47
         ================================================
         ID = 3 (0051):    15.70   1.637    12.00    35.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0051):    15.70   1.637    12.00    35.40
       + ID2= 2 (0069):     0.00   0.000     0.00     0.00
         ================================================
         ID = 1 (0051):    15.70   1.637    12.00    35.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0050):    20.92   0.777    12.20    40.02
       + ID2= 2 (0051):    15.70   1.637    12.00    35.40
         ================================================
         ID = 3 (0060):    36.62   2.243    12.00    38.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE     |  OUTFLOW    STORAGE
-------------------      (cms)      (ha.m.)     |   (cms)      (ha.m.)
                         0.0000     0.0000      |   0.5100      0.3577
                         0.2970     0.1233      |   0.6800      0.7154
                         0.4250     0.2220      |   0.7930      1.1964

                                AREA      QPEAK      TPEAK        R.V.
                                (ha)      (cms)      (hrs)        (mm)
    INFLOW : ID= 2 (0060)      36.620      2.243      12.00       38.05
    OUTFLOW: ID= 1 (0061)      36.620      0.547      13.30       38.04

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 24.38
                    TIME SHIFT OF PEAK FLOW      (min)= 78.00
                    MAXIMUM  STORAGE  USED       (ha.m.)=  0.4354

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  ******************************
  ** SIMULATION NUMBER:   3 **
  ******************************


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|    READ STORM    |    Filename: C:\Users\DMcBrayne\AppD
|                  |              ata\Local\Temp\
|                  |              122dfadb-b082-4939-8279-0906fc8de536\0d4474df
| Ptotal= 82.45 mm |    Comments: TEN YR SCS STORM 24HR TWELVE MIN TIME ST
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	0.76	6.20	1.78	12.20	92.20	18.20	1.78
0.40	0.76	6.40	1.78	12.40	16.00	18.40	1.78
0.60	0.76	6.60	1.78	12.60	10.16	18.60	1.78
0.80	0.76	6.80	1.78	12.80	7.37	18.80	1.78
1.00	0.76	7.00	1.78	13.00	6.86	19.00	1.78
1.20	0.76	7.20	1.78	13.20	4.83	19.20	1.78
1.40	0.76	7.40	1.78	13.40	4.06	19.40	1.27
1.60	0.76	7.60	1.78	13.60	4.06	19.60	1.27
1.80	0.76	7.80	1.78	13.80	4.06	19.80	1.27
2.00	0.76	8.00	1.78	14.00	4.06	20.00	1.27
2.20	0.76	8.20	1.78	14.20	4.06	20.20	1.27
2.40	0.76	8.40	2.54	14.40	2.54	20.40	1.27
2.60	0.76	8.60	2.54	14.60	2.54	20.60	1.27
2.80	0.76	8.80	2.54	14.80	2.54	20.80	1.27
3.00	0.76	9.00	2.54	15.00	2.54	21.00	1.27
3.20	0.76	9.20	2.54	15.20	2.54	21.20	1.27
3.40	0.76	9.40	2.54	15.40	2.54	21.40	0.76
3.60	0.76	9.60	2.54	15.60	2.54	21.60	0.76
3.80	0.76	9.80	2.54	15.80	2.54	21.80	0.76
4.00	0.76	10.00	2.54	16.00	2.54	22.00	0.76
4.20	0.76	10.20	2.54	16.20	2.54	22.20	0.76
4.40	1.78	10.40	4.57	16.40	1.78	22.40	0.76
4.60	1.78	10.60	4.57	16.60	1.78	22.60	0.76
4.80	1.78	10.80	4.57	16.80	1.78	22.80	0.76
5.00	1.78	11.00	4.57	17.00	1.78	23.00	0.76
5.20	1.78	11.20	4.57	17.20	1.78	23.20	0.76
5.40	1.78	11.40	6.10	17.40	1.78	23.40	0.76

5.60	1.78	11.60	8.89	17.60	1.78	23.60	0.76
5.80	1.78	11.80	20.07	17.80	1.78	23.80	0.76
6.00	1.78	12.00	44.20	18.00	1.78	24.00	0.76

CALIB
NASHYD (0011)
ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.087 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 32.935
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.399

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

CALIB
STANDHYD (0010)
ID= 1 DT=12.0 min

Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.60 0.18 0.789 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 64.70
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0012)
ID= 1 DT=12.0 min

Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		3.38 (ii)	9.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10

		TOTALS
PEAK FLOW	(cms)=	1.06 0.30 1.357 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 64.70
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0064)
ID= 1 DT=12.0 min

Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.19 0.27 0.460 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 49.24
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.60

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.789	12.20	64.70
+ ID2= 2 (0011):	0.91	0.087	12.20	32.93
ID = 3 (0013):	4.78	0.876	12.20	58.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	0.876	12.20	58.65
+ ID2= 2 (0012):	6.86	1.357	12.20	64.70
ID = 1 (0013):	11.64	2.233	12.20	62.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	2.233	12.20	62.21
+ ID2= 2 (0064):	2.95	0.460	12.20	49.24
ID = 3 (0013):	14.59	2.693	12.20	59.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 (0013)	14.590	2.693	12.20	59.59
OUTFLOW: ID= 1 (0021)	14.590	0.534	12.50	59.57

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.82
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.3563

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.53	12.50	59.57	0.32	1.80
OUTFLOW: ID= 1 (0031)	14.59	0.53	12.60	59.57	0.32	1.80

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.595 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 33.872
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.411

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.62	0.35	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.16	0.04	0.202 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	65.98
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.29	1.05	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.33	0.13	0.459 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	62.12
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.595	12.20	33.87
+ ID2= 2 (0017):	2.34	0.459	12.20	62.12
ID = 3 (0019):	8.87	1.053	12.20	41.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	1.053	12.20	41.32
+ ID2= 2 (0018):	0.97	0.202	12.20	65.98
ID = 1 (0019):	9.84	1.255	12.20	43.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	1.255	12.20	43.75
+ ID2= 2 (0031):	14.59	0.533	12.60	59.57
ID = 3 (0032):	24.43	1.619	12.20	53.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)

0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	1.619	12.20	53.20
OUTFLOW: ID= 1 (0022)	24.430	0.506	13.60	53.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 31.25
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.3078

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.711 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 35.373
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.429

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

CALIB
NASHYD (0025)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.216 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 34.708
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.421

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

CALIB
NASHYD (0027)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 29.119
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.353

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

CALIB
STANDHYD (0024)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.22 0.24 1.458 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 68.99
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0062)
ID= 1 DT=12.0 min

Area (ha)= 0.85
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.06 0.07 0.136 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 50.52
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.711	12.20	35.37
+ ID2= 2 (0024):	6.71	1.458	12.20	68.99
ID = 3 (0028):	16.89	2.169	12.20	48.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.169	12.20	48.73
+ ID2= 2 (0025):	2.59	0.216	12.20	34.71
ID = 1 (0028):	19.48	2.385	12.20	46.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	2.385	12.20	46.86
+ ID2= 2 (0027):	1.61	0.155	12.20	29.12
ID = 3 (0028):	21.09	2.539	12.20	45.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0028):	21.09	2.539	12.20	45.51
	+ ID2= 2 (0062):	0.85	0.136	12.20	50.52
	ID = 1 (0028):	21.94	2.675	12.20	45.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0022):	24.43	0.506	13.60	53.19
	+ ID2= 2 (0028):	21.94	2.675	12.20	45.70
	ID = 3 (0029):	46.37	3.039	12.20	49.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	1.3030	1.3940
	0.4380	0.4440	1.5000	1.8008
	0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.039	12.20	49.67
OUTFLOW: ID= 1 (0030)	46.370	0.636	14.40	49.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.92
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.6428

CALIB					
NASHYD (0005)	Area	(ha)=	1.33	Curve Number	(CN)= 74.0
ID= 1 DT= 5.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.13		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.76	6.083	1.78	12.083	92.19	18.08	1.78
0.167	0.76	6.167	1.78	12.167	92.20	18.17	1.78
0.250	0.76	6.250	1.78	12.250	46.49	18.25	1.78
0.333	0.76	6.333	1.78	12.333	16.00	18.33	1.78
0.417	0.76	6.417	1.78	12.417	14.83	18.42	1.78
0.500	0.76	6.500	1.78	12.500	10.16	18.50	1.78
0.583	0.76	6.583	1.78	12.583	10.16	18.58	1.78
0.667	0.76	6.667	1.78	12.667	7.93	18.67	1.78
0.750	0.76	6.750	1.78	12.750	7.37	18.75	1.78
0.833	0.76	6.833	1.78	12.833	7.17	18.83	1.78
0.917	0.76	6.917	1.78	12.917	6.86	18.92	1.78
1.000	0.76	7.000	1.78	13.000	6.86	19.00	1.78
1.083	0.76	7.083	1.78	13.083	4.83	19.08	1.78
1.167	0.76	7.167	1.78	13.167	4.83	19.17	1.78
1.250	0.76	7.250	1.78	13.250	4.37	19.25	1.47
1.333	0.76	7.333	1.78	13.333	4.06	19.33	1.27
1.417	0.76	7.417	1.78	13.417	4.06	19.42	1.27
1.500	0.76	7.500	1.78	13.500	4.06	19.50	1.27
1.583	0.76	7.583	1.78	13.583	4.06	19.58	1.27
1.667	0.76	7.667	1.78	13.667	4.06	19.67	1.27
1.750	0.76	7.750	1.78	13.750	4.06	19.75	1.27
1.833	0.76	7.833	1.78	13.833	4.06	19.83	1.27
1.917	0.76	7.917	1.78	13.917	4.06	19.92	1.27
2.000	0.76	8.000	1.78	14.000	4.06	20.00	1.27
2.083	0.76	8.083	1.78	14.083	4.06	20.08	1.27
2.167	0.76	8.167	1.78	14.167	4.06	20.17	1.27
2.250	0.76	8.250	2.24	14.250	3.15	20.25	1.27
2.333	0.76	8.333	2.54	14.333	2.54	20.33	1.27
2.417	0.76	8.417	2.54	14.417	2.54	20.42	1.27
2.500	0.76	8.500	2.54	14.500	2.54	20.50	1.27
2.583	0.76	8.583	2.54	14.583	2.54	20.58	1.27
2.667	0.76	8.667	2.54	14.667	2.54	20.67	1.27
2.750	0.76	8.750	2.54	14.750	2.54	20.75	1.27
2.833	0.76	8.833	2.54	14.833	2.54	20.83	1.27
2.917	0.76	8.917	2.54	14.917	2.54	20.92	1.27
3.000	0.76	9.000	2.54	15.000	2.54	21.00	1.27
3.083	0.76	9.083	2.54	15.083	2.54	21.08	1.27
3.167	0.76	9.167	2.54	15.167	2.54	21.17	1.27
3.250	0.76	9.250	2.54	15.250	2.54	21.25	0.96
3.333	0.76	9.333	2.54	15.333	2.54	21.33	0.76
3.417	0.76	9.417	2.54	15.417	2.54	21.42	0.76
3.500	0.76	9.500	2.54	15.500	2.54	21.50	0.76
3.583	0.76	9.583	2.54	15.583	2.54	21.58	0.76
3.667	0.76	9.667	2.54	15.667	2.54	21.67	0.76
3.750	0.76	9.750	2.54	15.750	2.54	21.75	0.76
3.833	0.76	9.833	2.54	15.833	2.54	21.83	0.76
3.917	0.76	9.917	2.54	15.917	2.54	21.92	0.76
4.000	0.76	10.000	2.54	16.000	2.54	22.00	0.76
4.083	0.76	10.083	2.54	16.083	2.54	22.08	0.76
4.167	0.76	10.167	2.54	16.167	2.54	22.17	0.76
4.250	1.37	10.250	3.76	16.250	2.08	22.25	0.76
4.333	1.78	10.333	4.57	16.333	1.78	22.33	0.76
4.417	1.78	10.417	4.57	16.417	1.78	22.42	0.76
4.500	1.78	10.500	4.57	16.500	1.78	22.50	0.76
4.583	1.78	10.583	4.57	16.583	1.78	22.58	0.76
4.667	1.78	10.667	4.57	16.667	1.78	22.67	0.76
4.750	1.78	10.750	4.57	16.750	1.78	22.75	0.76
4.833	1.78	10.833	4.57	16.833	1.78	22.83	0.76
4.917	1.78	10.917	4.57	16.917	1.78	22.92	0.76
5.000	1.78	11.000	4.57	17.000	1.78	23.00	0.76
5.083	1.78	11.083	4.57	17.083	1.78	23.08	0.76
5.167	1.78	11.167	4.57	17.167	1.78	23.17	0.76
5.250	1.78	11.250	5.49	17.250	1.78	23.25	0.76
5.333	1.78	11.333	6.10	17.333	1.78	23.33	0.76
5.417	1.78	11.417	6.66	17.417	1.78	23.42	0.76
5.500	1.78	11.500	8.89	17.500	1.78	23.50	0.76
5.583	1.78	11.583	8.89	17.583	1.78	23.58	0.76
5.667	1.78	11.667	17.83	17.667	1.78	23.67	0.76
5.750	1.78	11.750	20.07	17.750	1.78	23.75	0.76
5.833	1.78	11.833	29.72	17.833	1.78	23.83	0.76
5.917	1.78	11.917	44.20	17.917	1.78	23.92	0.76
6.000	1.78	12.000	44.20	18.000	1.78	24.00	0.76

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.133 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 35.626
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.432

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

CALIB					
STANDHYD (0004)	Area	(ha)=	1.45		
ID= 1 DT=12.0 min	Total Imp	(%)=	64.00	Dir. Conn.(%)=	64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	0.76	6.200	1.78	12.200	92.20	18.20	1.78
0.400	0.76	6.400	1.78	12.400	16.00	18.40	1.78
0.600	0.76	6.600	1.78	12.600	10.16	18.60	1.78
0.800	0.76	6.800	1.78	12.800	7.37	18.80	1.78
1.000	0.76	7.000	1.78	13.000	6.86	19.00	1.78
1.200	0.76	7.200	1.78	13.200	4.83	19.20	1.78
1.400	0.76	7.400	1.78	13.400	4.06	19.40	1.27
1.600	0.76	7.600	1.78	13.600	4.06	19.60	1.27
1.800	0.76	7.800	1.78	13.800	4.06	19.80	1.27
2.000	0.76	8.000	1.78	14.000	4.06	20.00	1.27
2.200	0.76	8.200	1.78	14.200	4.06	20.20	1.27
2.400	0.76	8.400	2.54	14.400	2.54	20.40	1.27
2.600	0.76	8.600	2.54	14.600	2.54	20.60	1.27
2.800	0.76	8.800	2.54	14.800	2.54	20.80	1.27
3.000	0.76	9.000	2.54	15.000	2.54	21.00	1.27

3.200	0.76	9.200	2.54	15.200	2.54	21.20	1.27
3.400	0.76	9.400	2.54	15.400	2.54	21.40	0.76
3.600	0.76	9.600	2.54	15.600	2.54	21.60	0.76
3.800	0.76	9.800	2.54	15.800	2.54	21.80	0.76
4.000	0.76	10.000	2.54	16.000	2.54	22.00	0.76
4.200	0.76	10.200	2.54	16.200	2.54	22.20	0.76
4.400	1.78	10.400	4.57	16.400	1.78	22.40	0.76
4.600	1.78	10.600	4.57	16.600	1.78	22.60	0.76
4.800	1.78	10.800	4.57	16.800	1.78	22.80	0.76
5.000	1.78	11.000	4.57	17.000	1.78	23.00	0.76
5.200	1.78	11.200	4.57	17.200	1.78	23.20	0.76
5.400	1.78	11.400	6.10	17.400	1.78	23.40	0.76
5.600	1.78	11.600	8.89	17.600	1.78	23.60	0.76
5.800	1.78	11.800	20.07	17.800	1.78	23.80	0.76
6.000	1.78	12.000	44.20	18.000	1.78	24.00	0.00

Max.Eff.Inten.(mm/hr)=	92.20	50.35	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	0.24	0.06	0.302 (iii)
TIME TO PEAK (hrs)=	12.20	12.20	12.20
RUNOFF VOLUME (mm)=	81.29	38.39	65.85
TOTAL RAINFALL (mm)=	82.29	82.29	82.29
RUNOFF COEFFICIENT =	0.99	0.47	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0063)
ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.01	2.61	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	

Max.Eff.Inten.(mm/hr)=	92.20	50.35	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	0.26	0.32	0.579 (iii)
TIME TO PEAK (hrs)=	12.20	12.20	12.20
RUNOFF VOLUME (mm)=	81.29	38.39	50.40
TOTAL RAINFALL (mm)=	82.29	82.29	82.29
RUNOFF COEFFICIENT =	0.99	0.47	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.302	12.20	65.85
+ ID2= 2 (0005):	1.33	0.133	12.25	35.63
ID = 3 (0007):	2.78	0.404	12.17	51.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0007):	2.78	0.404	12.17	51.29
+ ID2= 2 (0063):	3.62	0.579	12.20	50.40
ID = 1 (0007):	6.40	0.928	12.17	50.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.928	12.17	50.71
OUTFLOW: ID= 1 (0033)	6.400	0.076	13.17	50.62

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.15
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1771

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.08	13.17	50.62	0.12	0.92
OUTFLOW: ID= 1 (0034)	6.40	0.07	13.42	50.61	0.12	0.92

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.668 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 34.604
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.420

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

CALIB
NASHYD (0037)

Area (ha)= 10.64 Curve Number (CN)= 74.0

```
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.24

     Unit Hyd Qpeak  (cms)=   1.693

     PEAK FLOW       (cms)=   0.827 (i)
     TIME TO PEAK    (hrs)=  12.200
     RUNOFF VOLUME    (mm)=  34.942
     TOTAL RAINFALL   (mm)=  82.294
     RUNOFF COEFFICIENT   =   0.425

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

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--------------------
| CALIB            |
| NASHYD    (0038) |   Area     (ha)=   2.11   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.153 (i)
     TIME TO PEAK    (hrs)=  12.200
     RUNOFF VOLUME    (mm)=  35.176
     TOTAL RAINFALL   (mm)=  82.294
     RUNOFF COEFFICIENT   =   0.427

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0036) |   Area     (ha)=  17.98
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=    10.97          7.01
     Dep. Storage     (mm)=     1.00          1.50
     Average Slope     (%)=     2.00          2.00
     Length            (m)=    30.00         20.00
     Mannings n            =    0.013         0.250

     Max.Eff.Inten.(mm/hr)=    92.20         50.35
               over (min)      12.00         12.00
     Storage Coeff.  (min)=     1.04 (ii)     7.17 (ii)
     Unit Hyd. Tpeak (min)=    12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=     2.81          0.86       3.668 (iii)
     TIME TO PEAK    (hrs)=    12.20         12.20         12.20
     RUNOFF VOLUME    (mm)=    81.29         38.39         64.56
     TOTAL RAINFALL   (mm)=    82.29         82.29         82.29
     RUNOFF COEFFICIENT   =     0.99          0.47          0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0039) |   Area     (ha)=   1.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     0.67          0.54
     Dep. Storage     (mm)=     1.00          1.50
     Average Slope     (%)=     2.00          2.00
     Length            (m)=    30.00         20.00
     Mannings n            =    0.013         0.250

     Max.Eff.Inten.(mm/hr)=    92.20         50.35
               over (min)      12.00         12.00
     Storage Coeff.  (min)=     1.04 (ii)     7.17 (ii)
     Unit Hyd. Tpeak (min)=    12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.17          0.07       0.237 (iii)
     TIME TO PEAK    (hrs)=    12.20         12.20         12.20
     RUNOFF VOLUME    (mm)=    81.29         38.39         61.98
     TOTAL RAINFALL   (mm)=    82.29         82.29         82.29
     RUNOFF COEFFICIENT   =     0.99          0.47          0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (0074) |
| Inlet Cap.=0.169 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.21      0.24     12.20    61.98
     ==========================================================
     MAJOR SYS.(ID= 2):   0.08      0.07     12.20    61.98
     MINOR SYS.(ID= 3):   1.13      0.17     12.20    61.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0047) |   Area     (ha)=   1.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     0.96          0.54
     Dep. Storage     (mm)=     1.00          1.50
     Average Slope     (%)=     2.00          2.00
     Length            (m)=    30.00         20.00
     Mannings n            =    0.013         0.250

     Max.Eff.Inten.(mm/hr)=    92.20         50.35
               over (min)      12.00         12.00
     Storage Coeff.  (min)=     1.04 (ii)     7.17 (ii)
     Unit Hyd. Tpeak (min)=    12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.25          0.07       0.312 (iii)
     TIME TO PEAK    (hrs)=    12.20         12.20         12.20
     RUNOFF VOLUME    (mm)=    81.29         38.39         65.85
     TOTAL RAINFALL   (mm)=    82.29         82.29         82.29
     RUNOFF COEFFICIENT   =     0.99          0.47          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0072) |
| Inlet Cap.=0.363 |
| #of Inlets=    1 |
| Total(cms)=  0.4 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.50      0.31     12.20    65.85
     ==========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.50      0.31     12.20    65.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------        (ha)     (cms)    (hrs)      (mm)
          ID1= 1 (0035):     8.03    0.668    12.20     34.60
        + ID2= 2 (0036):    17.98    3.668    12.20     64.56
          ==========================================================
          ID = 3 (0040):    26.01    4.336    12.20     55.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0040)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0040):	26.01	4.336	12.20	55.31
	+ ID2= 2 (0037):	10.64	0.827	12.20	34.94
	ID = 1 (0040):	36.65	5.163	12.20	49.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	36.65	5.163	12.20	49.40
	+ ID2= 2 (0038):	2.11	0.153	12.20	35.18
	ID = 3 (0040):	38.76	5.316	12.20	48.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
*** W A R N I N G : HYDROGRAPH 0072 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
	ID1= 3 (0040):	38.76	5.316	12.20	48.62
	+ ID2= 2 (0072):	0.00	0.000	0.00	0.00
	ID = 1 (0040):	38.76	5.316	12.20	48.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	38.76	5.316	12.20	48.62
	+ ID2= 2 (0074):	0.08	0.068	12.20	61.98
	ID = 3 (0040):	38.84	5.384	12.20	48.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0034):	6.40	0.075	13.42	50.61
	+ ID2= 2 (0040):	38.84	5.384	12.20	48.65
	ID = 3 (0041):	45.24	4.896	12.17	48.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	3.1150	0.9004
DT= 5.0 min	1.2740	0.5550	3.6250	1.1600
	2.2650	0.7154	3.9640	1.3570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0041)	45.239	4.896	12.17	48.85
OUTFLOW: ID= 1 (0043)	45.239	1.709	12.50	48.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.90
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.6256

CALIB NASHYD (0044) ID= 1 DT=12.0 min				
Area (ha)= 3.28	Curve Number (CN)= 74.0			
Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
U.H. Tp(hrs)= 0.10				

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.264 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 22.632
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.275

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

CALIB NASHYD (0046) ID= 1 DT=12.0 min				
Area (ha)= 2.21	Curve Number (CN)= 74.0			
Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
U.H. Tp(hrs)= 0.23				

Unit Hyd Qpeak (cms)= 0.367

PEAK FLOW (cms)= 0.178 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 34.789
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.423

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

CALIB STANDHYD (0045) ID= 1 DT=12.0 min				
Area (ha)= 10.16				
Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	92.20	50.35	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.72	0.42	2.140 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.29	38.39	66.71
TOTAL RAINFALL	(mm)=	82.29	82.29	82.29
RUNOFF COEFFICIENT	=	0.99	0.47	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0059) ID= 1 DT=12.0 min				
Area (ha)= 1.27				
Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	92.20	50.35	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.22	0.05	0.271 (iii)

```
     TIME TO PEAK    (hrs)=      12.20        12.20          12.20
     RUNOFF VOLUME    (mm)=      81.29        38.39          67.56
     TOTAL RAINFALL   (mm)=      82.29        82.29          82.29
     RUNOFF COEFFICIENT   =       0.99         0.47           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.27     12.20   67.56
     ==========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.27      0.27     12.20   67.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0070) |   Area    (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.38         1.12
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     92.20        50.35
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.35         0.14          0.490 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.20          12.20
     RUNOFF VOLUME    (mm)=     81.29        38.39          61.98
     TOTAL RAINFALL   (mm)=     82.29        82.29          82.29
     RUNOFF COEFFICIENT   =      0.99         0.47           0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0071) |
| Inlet Cap.=0.550 |
| #of Inlets=    1 |
| Total(cms)=  0.6 |      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.50      0.49     12.20   61.98
     ==========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.50      0.49     12.20   61.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0044):     3.28    0.264    12.20    22.63
        + ID2= 2 (0045):    10.16    2.140    12.20    66.71
          ==========================================================
          ID = 3 (0048):    13.44    2.404    12.20    55.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0048):    13.44    2.404    12.20    55.95
        + ID2= 2 (0046):     2.21    0.178    12.20    34.79
          ==========================================================
          ID = 1 (0048):    15.65    2.582    12.20    52.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0048):    15.65    2.582    12.20    52.96
        + ID2= 2 (0069):     1.27    0.271    12.20    67.56
          ==========================================================
          ID = 3 (0048):    16.92    2.853    12.20    54.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0048):    16.92    2.853    12.20    54.06
        + ID2= 2 (0071):     2.50    0.490    12.20    61.98
          ==========================================================
          ID = 1 (0048):    19.42    3.343    12.20    55.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0048):    19.42    3.343    12.20    55.08
        + ID2= 2 (0072):     1.50    0.312    12.20    65.85
          ==========================================================
          ID = 3 (0048):    20.92    3.655    12.20    55.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  0.9630     0.3823
                         0.5430     0.1233     |  1.3030     0.6907
                         0.7650     0.2343     |  1.5860     1.0977

                                  AREA     QPEAK     TPEAK        R.V.
                                  (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0048)      20.920     3.655     12.20       55.85
     OUTFLOW: ID= 1 (0049)      20.920     0.937     12.40       55.85

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 25.64
               TIME SHIFT OF PEAK FLOW          (min)= 12.00
               MAXIMUM  STORAGE   USED        (ha.m.)=  0.3637

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--------------------
| ROUTE PIPE (0050)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 467.00
--------------------     Slope       (m/m)=  0.006
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME    FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)          min
        0.09    .201E+02         0.0          0.88         8.87
        0.17    .560E+02         0.2          1.37         5.68
        0.26    .101E+03         0.4          1.76         4.42
```

0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.94	12.40	55.85	0.40	2.27
OUTFLOW: ID= 1 (0050)	20.92	0.94	12.50	55.85	0.40	2.27

CALIB
NASHYD (0054) ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.112 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 34.604
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.420

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

CALIB
NASHYD (0056) ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 3.085
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.037

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

CALIB
NASHYD (0058) ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.175 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 35.266
TOTAL RAINFALL (mm)= 82.294
RUNOFF COEFFICIENT = 0.429

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

CALIB
STANDHYD (0057) ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.102 (iii)
TIME TO PEAK	(hrs)=	12.20
RUNOFF VOLUME	(mm)=	68.42
TOTAL RAINFALL	(mm)=	82.29
RUNOFF COEFFICIENT	=	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.102	12.20	68.42
+ ID2= 2 (0058):	2.51	0.175	12.20	35.27
ID = 3 (0073):	2.98	0.277	12.20	40.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)
Inlet Cap.=0.181
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.28	12.20	40.49
MAJOR SYS.(ID= 2):	0.17	0.10	12.20	40.49
MINOR SYS.(ID= 3):	2.81	0.18	12.20	40.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053) ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.156 (iii)
TIME TO PEAK	(hrs)=	12.20
RUNOFF VOLUME	(mm)=	62.42
TOTAL RAINFALL	(mm)=	82.29
RUNOFF COEFFICIENT	=	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0055) ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

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                              IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=       0.68         2.03
     Dep. Storage      (mm)=       1.00         1.50
     Average Slope      (%)=       2.00         2.00
     Length             (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      92.20        50.35
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.17         0.25          0.422 (iii)
     TIME TO PEAK    (hrs)=      12.20        12.20         12.20
     RUNOFF VOLUME    (mm)=      81.29        38.39         49.12
     TOTAL RAINFALL   (mm)=      82.29        82.29         82.29
     RUNOFF COEFFICIENT   =       0.99         0.47          0.60

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0065) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=       0.68         2.03
     Dep. Storage      (mm)=       1.00         1.50
     Average Slope      (%)=       2.00         2.00
     Length             (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      92.20        50.35
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.17         0.25          0.422 (iii)
     TIME TO PEAK    (hrs)=      12.20        12.20         12.20
     RUNOFF VOLUME    (mm)=      81.29        38.39         49.12
     TOTAL RAINFALL   (mm)=      82.29        82.29         82.29
     RUNOFF COEFFICIENT   =       0.99         0.47          0.60

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0053):     5.86   1.156    12.20    62.42
        + ID2= 2 (0054):     1.34   0.112    12.20    34.60
          ================================================
          ID = 3 (0051):     7.20   1.268    12.20    57.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0051):     7.20   1.268    12.20    57.24
        + ID2= 2 (0055):     2.71   0.422    12.20    49.12
          ================================================
          ID = 1 (0051):     9.91   1.690    12.20    55.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0051):     9.91   1.690    12.20    55.02
        + ID2= 2 (0056):     0.10   0.001    12.20     3.08
          ================================================
          ID = 3 (0051):    10.01   1.691    12.20    54.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0051):    10.01   1.691    12.20    54.50
        + ID2= 2 (0065):     2.71   0.422    12.20    49.12
          ================================================
          ID = 1 (0051):    12.72   2.114    12.20    53.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0051):    12.72   2.114    12.20    53.35
        + ID2= 2 (0066):     2.81   0.181    12.20    40.49
          ================================================
          ID = 3 (0051):    15.53   2.295    12.20    51.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0051):    15.53   2.295    12.20    51.03
        + ID2= 2 (0069):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0051):    15.53   2.295    12.20    51.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0050):    20.92   0.938    12.50    55.85
        + ID2= 2 (0051):    15.53   2.295    12.20    51.03
          ================================================
          ID = 3 (0060):    36.45   3.029    12.20    53.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |    OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |     (cms)     (ha.m.)
                          0.0000     0.0000    |     0.5100     0.3577
                          0.2970     0.1233    |     0.6800     0.7154
                          0.4250     0.2220    |     0.7930     1.1964

                                 AREA     QPEAK     TPEAK      R.V.
                                  (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0060)     36.446     3.029     12.20     53.80
     OUTFLOW: ID= 1 (0061)     36.446     0.652     14.00     53.80

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 21.52
               TIME SHIFT OF PEAK FLOW         (min)=108.00
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MAXIMUM STORAGE USED (ha.m.)= 0.6566

****
** SIMULATION NUMBER: 4 **
****

READ STORM | Ptotal= 95.96 mm | Filename: C:\Users\DMcBrayne\AppData\Local\Temp\122dfadb-b082-4939-8279-0906fc8de536\05dd739c
Comments: TWENTYFIVE YR SCS STORM WITH A TWELVE MI

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	1.02	6.20	2.03	12.20	18.80	18.20	2.03
0.40	1.02	6.40	2.03	12.40	11.68	18.40	2.03
0.60	1.02	6.60	2.03	12.60	8.38	18.60	2.03
0.80	1.02	6.80	2.03	12.80	8.13	18.80	2.03
1.00	1.02	7.00	2.03	13.00	5.59	19.00	2.03
1.20	1.02	7.20	2.03	13.20	4.83	19.20	1.52
1.40	1.02	7.40	2.03	13.40	4.83	19.40	1.52
1.60	1.02	7.60	2.03	13.60	4.83	19.60	1.52
1.80	1.02	7.80	2.03	13.80	4.83	19.80	1.52
2.00	1.02	8.00	2.03	14.00	4.83	20.00	1.52
2.20	1.02	8.20	2.79	14.20	2.79	20.20	1.52
2.40	1.02	8.40	2.79	14.40	2.79	20.40	1.52
2.60	1.02	8.60	2.79	14.60	2.79	20.60	1.52
2.80	1.02	8.80	2.79	14.80	2.79	20.80	1.52
3.00	1.02	9.00	2.79	15.00	2.79	21.00	1.52
3.20	1.02	9.20	2.79	15.20	2.79	21.20	1.02
3.40	1.02	9.40	2.79	15.40	2.79	21.40	1.02
3.60	1.02	9.60	2.79	15.60	2.79	21.60	1.02
3.80	1.02	9.80	2.79	15.80	2.79	21.80	1.02
4.00	1.02	10.00	2.79	16.00	2.79	22.00	1.02
4.20	2.03	10.20	5.08	16.20	2.03	22.20	1.02
4.40	2.03	10.40	5.08	16.40	2.03	22.40	1.02
4.60	2.03	10.60	5.08	16.60	2.03	22.60	1.02
4.80	2.03	10.80	5.08	16.80	2.03	22.80	1.02
5.00	2.03	11.00	5.08	17.00	2.03	23.00	1.02
5.20	2.03	11.20	7.11	17.20	2.03	23.20	1.02
5.40	2.03	11.40	10.41	17.40	2.03	23.40	1.02
5.60	2.03	11.60	23.37	17.60	2.03	23.60	1.02
5.80	2.03	11.80	51.56	17.80	2.03	23.80	1.02
6.00	2.03	12.00	107.44	18.00	2.03	24.00	1.02

CALIB NASHYD (0011) ID= 1 DT=12.0 min | Area (ha)= 0.91 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.111 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 42.025
TOTAL RAINFALL (mm)= 95.961
RUNOFF COEFFICIENT = 0.438

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

CALIB STANDHYD (0010) ID= 1 DT=12.0 min | Area (ha)= 3.87 | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.70	0.24	0.943 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	76.87
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 74.0 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.

CALIB STANDHYD (0012) ID= 1 DT=12.0 min | Area (ha)= 6.86 | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	3.18 (ii)	8.77 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	1.23	0.39	1.624 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	76.87
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 74.0 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.

CALIB STANDHYD (0064) ID= 1 DT=12.0 min | Area (ha)= 2.95 | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.22	0.35	0.569 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	60.17
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.943	12.00	76.87
+ ID2= 2 (0011):	0.91	0.111	12.00	42.03

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          ================================================
          ID = 3 (0013):     4.78   1.053    12.00    70.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0013) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0013):     4.78   1.053    12.00    70.23
        + ID2= 2 (0012):     6.86   1.624    12.00    76.87
          ================================================
          ID = 1 (0013):    11.64   2.677    12.00    74.14

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0013) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0013):    11.64   2.677    12.00    74.14
        + ID2= 2 (0064):     2.95   0.569    12.00    60.17
          ================================================
          ID = 3 (0013):    14.59   3.247    12.00    71.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0021) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |          OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------           (cms)     (ha.m.)    |   (cms)     (ha.m.)
                               0.0000    0.0000     |  0.6510     0.4563
                               0.1220    0.1110     |  0.8770     0.7650
                               0.3620    0.2096     |  0.0000     0.0000

                                    AREA     QPEAK     TPEAK      R.V.
                                    (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0013)      14.590     3.247     12.00     71.32
     OUTFLOW: ID= 1 (0021)      14.590     0.617     12.30     71.30

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.01
                    TIME SHIFT OF PEAK FLOW          (min)= 18.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.4278

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| ROUTE PIPE (0031)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 500.00
--------------------     Slope       (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE    VELOCITY    TRAV.TIME
        (m)      (cu.m.)       (cms)        (m/s)        min
       0.09     .216E+02        0.0         0.80        10.40
       0.17     .600E+02        0.1         1.25         6.67
       0.26     .108E+03        0.3         1.61         5.18
       0.35     .164E+03        0.6         1.91         4.36
       0.43     .225E+03        1.0         2.18         3.83
       0.52     .290E+03        1.4         2.41         3.46
       0.61     .358E+03        1.9         2.61         3.19
       0.69     .428E+03        2.4         2.79         2.99
       0.78     .499E+03        2.9         2.95         2.83
       0.87     .570E+03        3.5         3.08         2.70
       0.96     .642E+03        4.1         3.20         2.61
       1.04     .712E+03        4.7         3.29         2.53
       1.13     .780E+03        5.2         3.36         2.48
       1.22     .844E+03        5.8         3.41         2.44
       1.30     .905E+03        6.2         3.44         2.43
       1.39     .961E+03        6.6         3.43         2.43
       1.48     .101E+04        6.9         3.40         2.45
       1.56     .105E+04        6.9         3.31         2.52
       1.65     .107E+04        6.5         3.02         2.76
                                    <---- hydrograph ---->   <-pipe / channel->
                               AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                               (ha)    (cms)    (hrs)   (mm)      (m)       (m/s)
     INFLOW : ID= 2 (0021)   14.59     0.62    12.30  71.30      0.34      1.90
     OUTFLOW: ID= 1 (0031)   14.59     0.62    12.30  71.30      0.34      1.90
```

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| CALIB            |
| NASHYD    (0016) |   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.760 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  43.221
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.450

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

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--------------------
| CALIB            |
| STANDHYD  (0018) |   Area     (ha)=   0.97
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.62          0.35
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      107.44         63.42
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.98 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.19          0.06      0.240 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00      12.00
     RUNOFF VOLUME    (mm)=       94.96         48.57      78.26
     TOTAL RAINFALL   (mm)=       95.96         95.96      95.96
     RUNOFF COEFFICIENT   =        0.99          0.51       0.82

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0017) |   Area     (ha)=   2.34
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.29          1.05
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      107.44         63.42
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.98 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.38          0.17      0.550 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00      12.00
     RUNOFF VOLUME    (mm)=       94.96         48.57      74.08
     TOTAL RAINFALL   (mm)=       95.96         95.96      95.96
     RUNOFF COEFFICIENT   =        0.99          0.51       0.77

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0019) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0016):     6.53   0.760    12.00    43.22
        + ID2= 2 (0017):     2.34   0.550    12.00    74.08
          ================================================
          ID = 3 (0019):     8.87   1.310    12.00    51.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0019) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0019):     8.87   1.310    12.00    51.36
        + ID2= 2 (0018):     0.97   0.240    12.00    78.26
          ================================================
          ID = 1 (0019):     9.84   1.550    12.00    54.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0032) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):     9.84   1.550    12.00    54.01
        + ID2= 2 (0031):    14.59   0.618    12.30    71.30
          ================================================
          ID = 3 (0032):    24.43   1.978    12.00    64.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0022) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)     (cms)     (ha.m.)
                          0.0000     0.0000     0.6510     0.4564
                          0.1220     0.0863     0.8770     0.7894
                          0.3620     0.1603     0.0000     0.0000

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0032)     24.430     1.978     12.00     64.34
     OUTFLOW: ID= 1 (0022)     24.430     0.579     13.50     64.33

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 29.26
                    TIME SHIFT OF PEAK FLOW          (min)= 90.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.3823

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-------------------
| CALIB            |
| NASHYD    (0023) |   Area     (ha)=  10.18   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   1.440

     PEAK FLOW       (cms)=   0.911 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  45.136
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.470

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

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-------------------
| CALIB            |
| NASHYD    (0025) |   Area     (ha)=   2.59   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.276 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  44.289
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.462

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

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-------------------
| CALIB            |
| NASHYD    (0027) |   Area     (ha)=   1.61   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.197 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  37.157
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.387

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

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| CALIB            |
| STANDHYD  (0024) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.76          1.95
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     107.44         63.42
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       0.98 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.42          0.31       1.729 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00       12.00
     RUNOFF VOLUME    (mm)=      94.96         48.57       81.51
     TOTAL RAINFALL   (mm)=      95.96         95.96       95.96
     RUNOFF COEFFICIENT   =       0.99          0.51        0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0062) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.24          0.61
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     107.44         63.42
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       0.98 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.07          0.10       0.168 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00       12.00
     RUNOFF VOLUME    (mm)=      94.96         48.57       61.56
     TOTAL RAINFALL   (mm)=      95.96         95.96       95.96
     RUNOFF COEFFICIENT   =       0.99          0.51        0.64

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0023):	10.18	0.911	12.00	45.14
	+ ID2= 2 (0024):	6.71	1.729	12.00	81.51
	ID = 3 (0028):	16.89	2.640	12.00	59.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0028):	16.89	2.640	12.00	59.59
	+ ID2= 2 (0025):	2.59	0.276	12.00	44.29
	ID = 1 (0028):	19.48	2.915	12.00	57.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0028):	19.48	2.915	12.00	57.55
	+ ID2= 2 (0027):	1.61	0.197	12.00	37.16
	ID = 3 (0028):	21.09	3.112	12.00	56.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0028):	21.09	3.112	12.00	56.00
	+ ID2= 2 (0062):	0.85	0.168	12.00	61.56
	ID = 1 (0028):	21.94	3.280	12.00	56.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0022):	24.43	0.579	13.50	64.33
	+ ID2= 2 (0028):	21.94	3.280	12.00	56.21
	ID = 3 (0029):	46.37	3.677	12.00	60.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.677	12.00	60.51
OUTFLOW: ID= 1 (0030)	46.370	0.759	14.10	60.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.64
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 0.7666

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.02	6.083	2.03	12.083	18.81	18.08	2.03
0.167	1.02	6.167	2.03	12.167	18.80	18.17	2.03
0.250	1.02	6.250	2.03	12.250	14.53	18.25	2.03
0.333	1.02	6.333	2.03	12.333	11.68	18.33	2.03
0.417	1.02	6.417	2.03	12.417	11.02	18.42	2.03
0.500	1.02	6.500	2.03	12.500	8.38	18.50	2.03
0.583	1.02	6.583	2.03	12.583	8.38	18.58	2.03
0.667	1.02	6.667	2.03	12.667	8.18	18.67	2.03
0.750	1.02	6.750	2.03	12.750	8.13	18.75	2.03
0.833	1.02	6.833	2.03	12.833	7.11	18.83	2.03
0.917	1.02	6.917	2.03	12.917	5.59	18.92	2.03
1.000	1.02	7.000	2.03	13.000	5.59	19.00	2.03
1.083	1.02	7.083	2.03	13.083	4.83	19.08	1.52
1.167	1.02	7.167	2.03	13.167	4.83	19.17	1.52
1.250	1.02	7.250	2.03	13.250	4.83	19.25	1.52
1.333	1.02	7.333	2.03	13.333	4.83	19.33	1.52
1.417	1.02	7.417	2.03	13.417	4.83	19.42	1.52
1.500	1.02	7.500	2.03	13.500	4.83	19.50	1.52
1.583	1.02	7.583	2.03	13.583	4.83	19.58	1.52
1.667	1.02	7.667	2.03	13.667	4.83	19.67	1.52
1.750	1.02	7.750	2.03	13.750	4.83	19.75	1.52
1.833	1.02	7.833	2.03	13.833	4.83	19.83	1.52
1.917	1.02	7.917	2.03	13.917	4.83	19.92	1.52
2.000	1.02	8.000	2.03	14.000	4.83	20.00	1.52
2.083	1.02	8.083	2.79	14.083	2.79	20.08	1.52
2.167	1.02	8.167	2.79	14.167	2.79	20.17	1.52
2.250	1.02	8.250	2.79	14.250	2.79	20.25	1.52
2.333	1.02	8.333	2.79	14.333	2.79	20.33	1.52
2.417	1.02	8.417	2.79	14.417	2.79	20.42	1.52
2.500	1.02	8.500	2.79	14.500	2.79	20.50	1.52
2.583	1.02	8.583	2.79	14.583	2.79	20.58	1.52
2.667	1.02	8.667	2.79	14.667	2.79	20.67	1.52
2.750	1.02	8.750	2.79	14.750	2.79	20.75	1.52
2.833	1.02	8.833	2.79	14.833	2.79	20.83	1.52
2.917	1.02	8.917	2.79	14.917	2.79	20.92	1.52
3.000	1.02	9.000	2.79	15.000	2.79	21.00	1.52
3.083	1.02	9.083	2.79	15.083	2.79	21.08	1.02
3.167	1.02	9.167	2.79	15.167	2.79	21.17	1.02
3.250	1.02	9.250	2.79	15.250	2.79	21.25	1.02
3.333	1.02	9.333	2.79	15.333	2.79	21.33	1.02
3.417	1.02	9.417	2.79	15.417	2.79	21.42	1.02
3.500	1.02	9.500	2.79	15.500	2.79	21.50	1.02
3.583	1.02	9.583	2.79	15.583	2.79	21.58	1.02
3.667	1.02	9.667	2.79	15.667	2.79	21.67	1.02
3.750	1.02	9.750	2.79	15.750	2.79	21.75	1.02
3.833	1.02	9.833	2.79	15.833	2.79	21.83	1.02
3.917	1.02	9.917	2.79	15.917	2.79	21.92	1.02
4.000	1.02	10.000	2.79	16.000	2.79	22.00	1.02
4.083	2.03	10.083	5.08	16.083	2.03	22.08	1.02
4.167	2.03	10.167	5.08	16.167	2.03	22.17	1.02
4.250	2.03	10.250	5.08	16.250	2.03	22.25	1.02
4.333	2.03	10.333	5.08	16.333	2.03	22.33	1.02
4.417	2.03	10.417	5.08	16.417	2.03	22.42	1.02
4.500	2.03	10.500	5.08	16.500	2.03	22.50	1.02
4.583	2.03	10.583	5.08	16.583	2.03	22.58	1.02
4.667	2.03	10.667	5.08	16.667	2.03	22.67	1.02
4.750	2.03	10.750	5.08	16.750	2.03	22.75	1.02
4.833	2.03	10.833	5.08	16.833	2.03	22.83	1.02
4.917	2.03	10.917	5.08	16.917	2.03	22.92	1.02
5.000	2.03	11.000	5.08	17.000	2.03	23.00	1.02
5.083	2.03	11.083	7.11	17.083	2.03	23.08	1.02
5.167	2.03	11.167	7.11	17.167	2.03	23.17	1.02
5.250	2.03	11.250	9.09	17.250	2.03	23.25	1.02
5.333	2.03	11.333	10.41	17.333	2.03	23.33	1.02
5.417	2.03	11.417	13.00	17.417	2.03	23.42	1.02
5.500	2.03	11.500	23.37	17.500	2.03	23.50	1.02
5.583	2.03	11.583	23.37	17.583	2.03	23.58	1.02
5.667	2.03	11.667	45.92	17.667	2.03	23.67	1.02
5.750	2.03	11.750	51.56	17.750	2.03	23.75	1.02
5.833	2.03	11.833	73.91	17.833	2.03	23.83	1.02
5.917	2.03	11.917	107.44	17.917	2.03	23.92	1.02
6.000	2.03	12.000	107.44	18.000	2.03	24.00	1.02

Unit Hyd Qpeak (cms)= 0.391

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     PEAK FLOW       (cms)=   0.182 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  45.459
     TOTAL RAINFALL   (mm)=  95.962
     RUNOFF COEFFICIENT   =   0.474

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

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| CALIB            |
| STANDHYD  (0004) |   Area    (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.93          0.52
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
     0.200    1.02 | 6.200    2.03 |12.200   18.80 | 18.20    2.03
     0.400    1.02 | 6.400    2.03 |12.400   11.68 | 18.40    2.03
     0.600    1.02 | 6.600    2.03 |12.600    8.38 | 18.60    2.03
     0.800    1.02 | 6.800    2.03 |12.800    8.13 | 18.80    2.03
     1.000    1.02 | 7.000    2.03 |13.000    5.59 | 19.00    2.03
     1.200    1.02 | 7.200    2.03 |13.200    4.83 | 19.20    1.52
     1.400    1.02 | 7.400    2.03 |13.400    4.83 | 19.40    1.52
     1.600    1.02 | 7.600    2.03 |13.600    4.83 | 19.60    1.52
     1.800    1.02 | 7.800    2.03 |13.800    4.83 | 19.80    1.52
     2.000    1.02 | 8.000    2.03 |14.000    4.83 | 20.00    1.52
     2.200    1.02 | 8.200    2.79 |14.200    2.79 | 20.20    1.52
     2.400    1.02 | 8.400    2.79 |14.400    2.79 | 20.40    1.52
     2.600    1.02 | 8.600    2.79 |14.600    2.79 | 20.60    1.52
     2.800    1.02 | 8.800    2.79 |14.800    2.79 | 20.80    1.52
     3.000    1.02 | 9.000    2.79 |15.000    2.79 | 21.00    1.52
     3.200    1.02 | 9.200    2.79 |15.200    2.79 | 21.20    1.02
     3.400    1.02 | 9.400    2.79 |15.400    2.79 | 21.40    1.02
     3.600    1.02 | 9.600    2.79 |15.600    2.79 | 21.60    1.02
     3.800    1.02 | 9.800    2.79 |15.800    2.79 | 21.80    1.02
     4.000    1.02 |10.000    2.79 |16.000    2.79 | 22.00    1.02
     4.200    2.03 |10.200    5.08 |16.200    2.03 | 22.20    1.02
     4.400    2.03 |10.400    5.08 |16.400    2.03 | 22.40    1.02
     4.600    2.03 |10.600    5.08 |16.600    2.03 | 22.60    1.02
     4.800    2.03 |10.800    5.08 |16.800    2.03 | 22.80    1.02
     5.000    2.03 |11.000    5.08 |17.000    2.03 | 23.00    1.02
     5.200    2.03 |11.200    7.11 |17.200    2.03 | 23.20    1.02
     5.400    2.03 |11.400   10.41 |17.400    2.03 | 23.40    1.02
     5.600    2.03 |11.600   23.37 |17.600    2.03 | 23.60    1.02
     5.800    2.03 |11.800   51.56 |17.800    2.03 | 23.80    1.02
     6.000    2.03 |12.000  107.44 |18.000    2.03 | 24.00    0.00

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.28         0.08      0.359 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=      94.76        48.42      78.07
     TOTAL RAINFALL   (mm)=      95.76        95.76      95.76
     RUNOFF COEFFICIENT   =       0.99         0.51       0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0063) |   Area    (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.01          2.61
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.30         0.41      0.714 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=      94.76        48.42      61.39
     TOTAL RAINFALL   (mm)=      95.76        95.76      95.76
     RUNOFF COEFFICIENT   =       0.99         0.51       0.64

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0007) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0004):      1.45    0.359    12.00    78.07
       + ID2= 2 (0005):      1.33    0.182    12.00    45.46
         ================================================
         ID = 3 (0007):      2.78    0.541    12.00    62.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0007) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0007):      2.78    0.541    12.00    62.70
       + ID2= 2 (0063):      3.62    0.714    12.00    61.39
         ================================================
         ID = 1 (0007):      6.40    1.255    12.00    62.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0033) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0000    |   0.3260     0.8017
                          0.0790     0.1850    |   0.3960     0.9004
                          0.2270     0.3947    |   0.0000     0.0000

                              AREA     QPEAK     TPEAK      R.V.
                              (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0007)    6.400     1.255     12.00     62.15
     OUTFLOW: ID= 1 (0033)    6.400     0.101     12.92     62.06

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.01
                TIME SHIFT OF PEAK FLOW          (min)= 55.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.2156

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--------------------
| ROUTE PIPE (0034)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 850.00
--------------------     Slope      (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)      (cu.m.)       (cms)         (m/s)         min
        0.09     .367E+02        0.0          0.80         17.68
        0.17     .102E+03        0.1          1.25         11.33
        0.26     .184E+03        0.3          1.61          8.81
        0.35     .278E+03        0.6          1.91          7.41
```

0.43	.382E+03	1.0	2.18	6.51	
0.52	.492E+03	1.4	2.41	5.88	
0.61	.608E+03	1.9	2.61	5.43	
0.69	.727E+03	2.4	2.79	5.08	
0.78	.848E+03	2.9	2.95	4.81	
0.87	.970E+03	3.5	3.08	4.60	
0.96	.109E+04	4.1	3.20	4.43	
1.04	.121E+04	4.7	3.29	4.31	
1.13	.133E+04	5.2	3.36	4.22	
1.22	.144E+04	5.8	3.41	4.15	
1.30	.154E+04	6.2	3.44	4.12	
1.39	.163E+04	6.6	3.43	4.13	
1.48	.172E+04	6.9	3.40	4.17	
1.56	.178E+04	6.9	3.31	4.28	
1.65	.182E+04	6.5	3.02	4.70	

		<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.10	12.92	62.06	0.14	1.01
OUTFLOW: ID= 1 (0034)	6.40	0.10	13.08	62.05	0.14	1.00

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.855 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 44.141
TOTAL RAINFALL (mm)= 95.758
RUNOFF COEFFICIENT = 0.461

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 1.059 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 44.572
TOTAL RAINFALL (mm)= 95.758
RUNOFF COEFFICIENT = 0.465

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.196 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 44.871
TOTAL RAINFALL (mm)= 95.758
RUNOFF COEFFICIENT = 0.469

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

				TOTALS
Max.Eff.Inten.	(mm/hr)=	107.44	63.42	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
PEAK FLOW	(cms)=	3.27	1.11	4.380 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.76	48.42	76.68
TOTAL RAINFALL	(mm)=	95.76	95.76	95.76
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

				TOTALS
Max.Eff.Inten.	(mm/hr)=	107.44	63.42	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
PEAK FLOW	(cms)=	0.20	0.09	0.285 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.76	48.42	73.90
TOTAL RAINFALL	(mm)=	95.76	95.76	95.76
RUNOFF COEFFICIENT	=	0.99	0.51	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.28	12.00	73.90
MAJOR SYS.(ID= 2):	0.11	0.12	12.00	73.90
MINOR SYS.(ID= 3):	1.10	0.17	12.00	73.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0047)
ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

				TOTALS
Max.Eff.Inten.	(mm/hr)=	107.44	63.42	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	

```
     PEAK FLOW       (cms)=       0.29          0.09          0.372 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      94.76         48.42          78.07
     TOTAL RAINFALL   (mm)=      95.76         95.76          95.76
     RUNOFF COEFFICIENT   =       0.99          0.51           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (0072) |
| Inlet Cap.=0.363 |
| #of Inlets=    1 |
| Total(cms)=  0.4 |       AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.50      0.37     12.00   78.07
     ================================================
     MAJOR SYS.(ID= 2):   0.01      0.01     12.00   78.07
     MINOR SYS.(ID= 3):   1.49      0.36     12.00   78.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0035):      8.03   0.855    12.00    44.14
       + ID2= 2 (0036):     17.98   4.380    12.00    76.68
         ================================================
         ID = 3 (0040):     26.01   5.234    12.00    66.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0040):     26.01   5.234    12.00    66.64
       + ID2= 2 (0037):     10.64   1.059    12.00    44.57
         ================================================
         ID = 1 (0040):     36.65   6.293    12.00    60.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0040):     36.65   6.293    12.00    60.23
       + ID2= 2 (0038):      2.11   0.196    12.00    44.87
         ================================================
         ID = 3 (0040):     38.76   6.489    12.00    59.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0040):     38.76   6.489    12.00    59.40
       + ID2= 2 (0072):      0.01   0.009    12.00    78.07
         ================================================
         ID = 1 (0040):     38.77   6.497    12.00    59.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0040):     38.77   6.497    12.00    59.40
       + ID2= 2 (0074):      0.11   0.116    12.00    73.90
         ================================================
         ID = 3 (0040):     38.88   6.613    12.00    59.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0034):      6.40   0.100    13.08    62.05
       + ID2= 2 (0040):     38.88   6.613    12.00    59.44
         ================================================
         ID = 3 (0041):     45.28   6.650    12.00    60.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  3.1150      0.9004
                         1.2740     0.5550     |  3.6250      1.1600
                         2.2650     0.7154     |  3.9640      1.3570

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0041)      45.281     6.650     12.00      60.06
     OUTFLOW: ID= 1 (0043)      45.281     2.415     12.25      60.05

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 36.32
                   TIME SHIFT OF PEAK FLOW         (min)= 15.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  0.7482

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--------------------
| CALIB            |
| NASHYD    (0044) |   Area    (ha)=   3.28   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.336 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  28.869
     TOTAL RAINFALL   (mm)=  95.758
     RUNOFF COEFFICIENT   =   0.301

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

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--------------------
| CALIB            |
| NASHYD    (0046) |   Area    (ha)=   2.21   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.228 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  44.377
     TOTAL RAINFALL   (mm)=  95.758
     RUNOFF COEFFICIENT   =   0.463

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

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| CALIB            |
| STANDHYD  (0045) |   Area    (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      6.71          3.45
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n           =     0.013         0.250
```

Max.Eff.Inten.(mm/hr)=	107.44	63.42		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.98 (ii)	6.57 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	2.00	0.54	2.546 (iii)	
TIME TO PEAK (hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME (mm)=	94.76	48.42	79.00	
TOTAL RAINFALL (mm)=	95.76	95.76	95.76	
RUNOFF COEFFICIENT =	0.99	0.51	0.83	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0059)
ID= 1 DT=12.0 min

Area (ha)= 1.27
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.86	0.41
Dep. Storage (mm)=		1.00	1.50
Average Slope (%)=		2.00	2.00
Length (m)=		30.00	20.00
Mannings n =		0.013	0.250

Max.Eff.Inten.(mm/hr)=	107.44	63.42		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.98 (ii)	6.57 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.26	0.06	0.322 (iii)	
TIME TO PEAK (hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME (mm)=	94.76	48.42	79.93	
TOTAL RAINFALL (mm)=	95.76	95.76	95.76	
RUNOFF COEFFICIENT =	0.99	0.51	0.83	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)
Inlet Cap.=0.320
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.32	12.00	79.93
MAJOR SYS.(ID= 2):	0.00	0.00	12.00	79.93
MINOR SYS.(ID= 3):	1.27	0.32	12.00	79.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0070)
ID= 1 DT=12.0 min

Area (ha)= 2.50
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		1.38	1.12
Dep. Storage (mm)=		1.00	1.50
Average Slope (%)=		2.00	2.00
Length (m)=		30.00	20.00
Mannings n =		0.013	0.250

Max.Eff.Inten.(mm/hr)=	107.44	63.42		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.98 (ii)	6.57 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.41	0.18	0.588 (iii)	
TIME TO PEAK (hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME (mm)=	94.76	48.42	73.90	
TOTAL RAINFALL (mm)=	95.76	95.76	95.76	
RUNOFF COEFFICIENT =	0.99	0.51	0.77	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)
Inlet Cap.=0.550
#of Inlets= 1
Total(cms)= 0.6

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.59	12.00	73.90
MAJOR SYS.(ID= 2):	0.04	0.04	12.00	73.90
MINOR SYS.(ID= 3):	2.46	0.55	12.00	73.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.336	12.00	28.87
+ ID2= 2 (0045):	10.16	2.546	12.00	79.00
ID = 3 (0048):	13.44	2.882	12.00	66.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	2.882	12.00	66.77
+ ID2= 2 (0046):	2.21	0.228	12.00	44.38
ID = 1 (0048):	15.65	3.109	12.00	63.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	3.109	12.00	63.61
+ ID2= 2 (0069):	1.27	0.320	12.00	79.93
ID = 3 (0048):	16.92	3.429	12.00	64.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	3.429	12.00	64.83
+ ID2= 2 (0071):	2.46	0.550	12.00	73.90
ID = 1 (0048):	19.38	3.979	12.00	65.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
          ID1= 1 (0048):    19.38   3.979    12.00    65.98
        + ID2= 2 (0072):     1.49   0.363    12.00    78.07
          ================================================
          ID = 3 (0048):    20.87   4.342    12.00    66.85

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
-------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.9630      0.3823
                         0.5430     0.1233     |   1.3030      0.6907
                         0.7650     0.2343     |   1.5860      1.0977

                                  AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
    INFLOW : ID= 2 (0048)      20.873     4.342     12.00      66.85
    OUTFLOW: ID= 1 (0049)      20.873     1.031     12.20      66.84

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.74
                  TIME SHIFT OF PEAK FLOW          (min)= 12.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4449

------------------------------------------------------------------------------
-------------------
| ROUTE PIPE (0050)|     PIPE Number     =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 467.00
-------------------      Slope      (m/m)=  0.006
                         Manning n        =  0.013

    <------------------ TRAVEL TIME TABLE ---------------------->
      DEPTH      VOLUME     FLOW RATE    VELOCITY     TRAV.TIME
        (m)     (cu.m.)       (cms)        (m/s)         min
       0.09    .201E+02         0.0         0.88          8.87
       0.17    .560E+02         0.2         1.37          5.68
       0.26    .101E+03         0.4         1.76          4.42
       0.35    .153E+03         0.7         2.09          3.72
       0.43    .210E+03         1.1         2.38          3.27
       0.52    .270E+03         1.5         2.64          2.95
       0.61    .334E+03         2.0         2.86          2.72
       0.69    .399E+03         2.6         3.06          2.55
       0.78    .466E+03         3.2         3.23          2.41
       0.87    .533E+03         3.9         3.38          2.31
       0.96    .599E+03         4.5         3.50          2.22
       1.04    .665E+03         5.1         3.60          2.16
       1.13    .728E+03         5.7         3.68          2.11
       1.22    .789E+03         6.3         3.74          2.08
       1.30    .846E+03         6.8         3.76          2.07
       1.39    .897E+03         7.2         3.76          2.07
       1.48    .943E+03         7.5         3.72          2.09
       1.56    .978E+03         7.6         3.63          2.15
       1.65    .999E+03         7.1         3.30          2.36
                                <---- hydrograph ---->   <-pipe / channel->
                             AREA    QPEAK   TPEAK   R.V.    MAX DEPTH  MAX VEL
                              (ha)    (cms)   (hrs)   (mm)       (m)      (m/s)
    INFLOW : ID= 2 (0049)   20.87     1.03   12.20  66.84      0.43      2.35
    OUTFLOW: ID= 1 (0050)   20.87     1.03   12.30  66.84      0.43      2.35


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-------------------
| CALIB            |
| NASHYD    (0054) |   Area     (ha)=   1.34   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.233

     PEAK FLOW       (cms)=   0.143 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  44.141
     TOTAL RAINFALL   (mm)=  95.758
     RUNOFF COEFFICIENT   =   0.461

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

------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0056) |   Area     (ha)=   0.10   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.05

     Unit Hyd Qpeak  (cms)=   0.076

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=   3.935
     TOTAL RAINFALL   (mm)=  95.758
     RUNOFF COEFFICIENT   =   0.041

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

------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0058) |   Area     (ha)=   2.51   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.355

     PEAK FLOW       (cms)=   0.225 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  44.985
     TOTAL RAINFALL   (mm)=  95.758
     RUNOFF COEFFICIENT   =   0.470

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

------------------------------------------------------------------------------
-------------------
| CALIB            |
| STANDHYD  (0057) |   Area     (ha)=   0.47
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                                  IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=         0.33          0.14
     Dep. Storage      (mm)=         1.00          1.50
     Average Slope      (%)=         2.00          2.00
     Length             (m)=        30.00         20.00
     Mannings n             =        0.013         0.250

     Max.Eff.Inten.(mm/hr)=       107.44         63.42
           over (min)             12.00         12.00
     Storage Coeff. (min)=         0.98 (ii)     6.57 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.10          0.02      0.120 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00      12.00
     RUNOFF VOLUME    (mm)=       94.76         48.42      80.85
     TOTAL RAINFALL   (mm)=       95.76         95.76      95.76
     RUNOFF COEFFICIENT   =        0.99          0.51       0.84

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0073) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0057):     0.47    0.120    12.00    80.85
        + ID2= 2 (0058):     2.51    0.225    12.00    44.99
          ================================================
          ID = 3 (0073):     2.98    0.345    12.00    50.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| DUHYD     (0066) |
| Inlet Cap.=0.181 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |          AREA     QPEAK     TPEAK     R.V.
-------------------           (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):     2.98      0.34      12.00    50.64
     ================================================
     MAJOR SYS.(ID= 2):     0.31      0.16      12.00    50.64
     MINOR SYS.(ID= 3):     2.67      0.18      12.00    50.64
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0053)	Area (ha)= 5.86		
ID= 1 DT=12.0 min	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.98	0.41	1.386 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.76	48.42	74.37
TOTAL RAINFALL	(mm)=	95.76	95.76	95.76
RUNOFF COEFFICIENT	=	0.99	0.51	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0055)	Area (ha)= 2.71		
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.20	0.32	0.523 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.76	48.42	60.00
TOTAL RAINFALL	(mm)=	95.76	95.76	95.76
RUNOFF COEFFICIENT	=	0.99	0.51	0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0065)	Area (ha)= 2.71		
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.20	0.32	0.523 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.76	48.42	60.00
TOTAL RAINFALL	(mm)=	95.76	95.76	95.76
RUNOFF COEFFICIENT	=	0.99	0.51	0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	1.386	12.00	74.37
+ ID2= 2 (0054):	1.34	0.143	12.00	44.14
ID = 3 (0051):	7.20	1.529	12.00	68.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.529	12.00	68.74
+ ID2= 2 (0055):	2.71	0.523	12.00	60.00
ID = 1 (0051):	9.91	2.052	12.00	66.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	2.052	12.00	66.35
+ ID2= 2 (0056):	0.10	0.001	12.00	3.94
ID = 3 (0051):	10.01	2.053	12.00	65.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	2.053	12.00	65.73
+ ID2= 2 (0065):	2.71	0.523	12.00	60.00
ID = 1 (0051):	12.72	2.576	12.00	64.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	2.576	12.00	64.51
+ ID2= 2 (0066):	2.67	0.181	12.00	50.64
ID = 3 (0051):	15.39	2.757	12.00	62.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
          ID1= 3 (0051):    15.39   2.757    12.00    62.10
        + ID2= 2 (0069):     0.00   0.002    12.00    79.93
          ================================================
          ID = 1 (0051):    15.40   2.759    12.00    62.10

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

ADD HYD (0060)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0050):	20.87	1.035	12.30	66.84
	+ ID2= 2 (0051):	15.40	2.759	12.00	62.10
	ID = 3 (0060):	36.27	3.570	12.00	64.84

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

RESERVOIR (0061)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.5100	0.3577
DT= 5.0 min	0.2970	0.1233	0.6800	0.7154
	0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.270	3.570	12.00	64.84
OUTFLOW: ID= 1 (0061)	36.270	0.703	14.10	64.84

```
                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.68
                TIME SHIFT OF PEAK FLOW         (min)=126.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.8115
```

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  ****************************
  ** SIMULATION NUMBER:   5 **
  ****************************
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```
| READ STORM |  Filename: C:\Users\DMcBrayne\AppD
|            |            ata\Local\Temp\
|            |            122dfadb-b082-4939-8279-0906fc8de536\0f46b514
| Ptotal=108.06 mm |  Comments: FIFTY YR SCS STORM 12 MIN TIME STEP 24 H
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	1.10	6.20	2.20	12.20	22.04	18.20	2.20
0.40	1.10	6.40	2.20	12.40	13.78	18.40	2.20
0.60	1.10	6.60	2.20	12.60	9.92	18.60	2.20
0.80	1.10	6.80	2.20	12.80	9.37	18.80	2.20
1.00	1.10	7.00	2.20	13.00	6.61	19.00	2.20
1.20	1.10	7.20	2.20	13.20	5.51	19.20	1.65
1.40	1.10	7.40	2.20	13.40	5.51	19.40	1.65
1.60	1.10	7.60	2.20	13.60	5.51	19.60	1.65
1.80	1.10	7.80	2.20	13.80	5.51	19.80	1.65
2.00	1.10	8.00	2.20	14.00	5.51	20.00	1.65
2.20	1.10	8.20	3.31	14.20	3.31	20.20	1.65
2.40	1.10	8.40	3.31	14.40	3.31	20.40	1.65
2.60	1.10	8.60	3.31	14.60	3.31	20.60	1.65
2.80	1.10	8.80	3.31	14.80	3.31	20.80	1.65
3.00	1.10	9.00	3.31	15.00	3.31	21.00	1.65
3.20	1.10	9.20	3.31	15.20	3.31	21.20	1.10
3.40	1.10	9.40	3.31	15.40	3.31	21.40	1.10
3.60	1.10	9.60	3.31	15.60	3.31	21.60	1.10
3.80	1.10	9.80	3.31	15.80	3.31	21.80	1.10
4.00	1.10	10.00	3.31	16.00	3.31	22.00	1.10
4.20	2.20	10.20	6.05	16.20	2.20	22.20	1.10
4.40	2.20	10.40	6.05	16.40	2.20	22.40	1.10
4.60	2.20	10.60	6.05	16.60	2.20	22.60	1.10
4.80	2.20	10.80	6.05	16.80	2.20	22.80	1.10
5.00	2.20	11.00	6.05	17.00	2.20	23.00	1.10
5.20	2.20	11.20	8.26	17.20	2.20	23.20	1.10
5.40	2.20	11.40	12.12	17.40	2.20	23.40	1.10
5.60	2.20	11.60	27.55	17.60	2.20	23.60	1.10
5.80	2.20	11.80	60.61	17.80	2.20	23.80	1.10
6.00	2.20	12.00	114.06	18.00	2.20	24.00	1.10

```
| CALIB
| NASHYD  (0011) |  Area    (ha)=   0.91   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |  Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------  U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.128 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  50.557
     TOTAL RAINFALL   (mm)= 108.064
     RUNOFF COEFFICIENT   =   0.468

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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```
| CALIB
| STANDHYD  (0010) |  Area    (ha)=   3.87
|ID= 1 DT=12.0 min |  Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.36	1.51	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	114.06	71.61	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.75	0.27	1.022 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	87.93
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.81

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.
```

```
| CALIB
| STANDHYD  (0012) |  Area    (ha)=   6.86
|ID= 1 DT=12.0 min |  Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	213.85	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	114.06	71.61	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	3.11 (ii)	8.43 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	1.31	0.45	1.764 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	57.99	87.93
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.81

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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```
| CALIB
| STANDHYD  (0064) |  Area    (ha)=   2.95
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|ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.74	2.21
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	114.06	71.61
over (min)	12.00	12.00
Storage Coeff. (min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

		TOTALS
PEAK FLOW (cms)=	0.23	0.40	0.635 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.06	58.00	70.26
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.54	0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0010):	3.87	1.022	12.00	87.93
	+ ID2= 2 (0011):	0.91	0.128	12.00	50.56
	ID = 3 (0013):	4.78	1.150	12.00	80.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)	3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0013):	4.78	1.150	12.00	80.81
	+ ID2= 2 (0012):	6.86	1.764	12.00	87.93
	ID = 1 (0013):	11.64	2.914	12.00	85.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0013):	11.64	2.914	12.00	85.00
	+ ID2= 2 (0064):	2.95	0.635	12.00	70.26
	ID = 3 (0013):	14.59	3.549	12.00	82.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)	IN= 2---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.6510	0.4563
			0.1220	0.1110	0.8770	0.7650
			0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	3.549	12.00	82.02
OUTFLOW: ID= 1 (0021)	14.590	0.677	12.30	82.01

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.07
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.4926

ROUTE PIPE (0031)	IN= 2---> OUT= 1	DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.68	12.30	82.01	0.36	1.95
OUTFLOW: ID= 1 (0031)	14.59	0.68	12.40	82.01	0.36	1.95

CALIB	NASHYD (0016)	ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.885 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 51.995
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.481

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

CALIB	STANDHYD (0018)	ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.62	0.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	114.06	71.61
over (min)	12.00	12.00
Storage Coeff. (min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

		TOTALS
PEAK FLOW (cms)=	0.20	0.06	0.260 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.06	58.00	89.40
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.54	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0017)	Area (ha)= 2.34				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.29	1.05	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	114.06	71.61	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.41	0.19	0.599 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	84.98
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	6.53	0.885	12.00	52.00
	+ ID2= 2 (0017):	2.34	0.599	12.00	84.98
	ID = 3 (0019):	8.87	1.483	12.00	60.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0019):	8.87	1.483	12.00	60.70
	+ ID2= 2 (0018):	0.97	0.260	12.00	89.40
	ID = 1 (0019):	9.84	1.743	12.00	63.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0019):	9.84	1.743	12.00	63.53
	+ ID2= 2 (0031):	14.59	0.677	12.40	82.01
	ID = 3 (0032):	24.43	2.227	12.00	74.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4564
	0.1220	0.0863	0.8770	0.7894
	0.3620	0.1603	0.0000	0.0000

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0032)	24.430	2.227	12.00	74.56
OUTFLOW: ID= 1 (0022)	24.430	0.649	13.60	74.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.13
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4543

CALIB					
NASHYD (0023)	Area (ha)= 10.18	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.27				

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW	(cms)=	1.079 (i)
TIME TO PEAK	(hrs)=	12.000
RUNOFF VOLUME	(mm)=	54.299
TOTAL RAINFALL	(mm)=	108.064
RUNOFF COEFFICIENT	=	0.502

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

CALIB					
NASHYD (0025)	Area (ha)= 2.59	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.22				

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW	(cms)=	0.323 (i)
TIME TO PEAK	(hrs)=	12.000
RUNOFF VOLUME	(mm)=	53.280
TOTAL RAINFALL	(mm)=	108.064
RUNOFF COEFFICIENT	=	0.493

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

CALIB					
NASHYD (0027)	Area (ha)= 1.61	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.13				

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW	(cms)=	0.226 (i)
TIME TO PEAK	(hrs)=	12.000
RUNOFF VOLUME	(mm)=	44.700
TOTAL RAINFALL	(mm)=	108.064
RUNOFF COEFFICIENT	=	0.414

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

CALIB					
STANDHYD (0024)	Area (ha)= 6.71				
ID= 1 DT=12.0 min	Total Imp(%)= 71.00	Dir. Conn.(%)= 71.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.76	1.95	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	114.06	71.61	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.51	0.35	1.862 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	92.83
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 74.0 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.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min | Area (ha)= 0.85 | Total Imp(%)= 28.00 | Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.24	0.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	114.06	71.61
over (min)	12.00	12.00
Storage Coeff. (min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

			TOTALS
PEAK FLOW (cms)=	0.08	0.11	0.186 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.06	57.99	71.73
TOTAL RAINFALL (mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT =	0.99	0.54	0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	1.079	12.00	54.30
+ ID2= 2 (0024):	6.71	1.862	12.00	92.83
ID = 3 (0028):	16.89	2.941	12.00	69.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.941	12.00	69.61
+ ID2= 2 (0025):	2.59	0.323	12.00	53.28
ID = 1 (0028):	19.48	3.264	12.00	67.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	3.264	12.00	67.44
+ ID2= 2 (0027):	1.61	0.226	12.00	44.70
ID = 3 (0028):	21.09	3.490	12.00	65.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	3.490	12.00	65.70
+ ID2= 2 (0062):	0.85	0.186	12.00	71.73
ID = 1 (0028):	21.94	3.677	12.00	65.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.649	13.60	74.56
+ ID2= 2 (0028):	21.94	3.677	12.00	65.94
ID = 3 (0029):	46.37	4.111	12.00	70.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	4.111	12.00	70.50
OUTFLOW: ID= 1 (0030)	46.370	0.879	14.10	70.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.39
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 0.8878

CALIB NASHYD (0005) ID= 1 DT= 5.0 min | Area (ha)= 1.33 | Ia (mm)= 5.00 | U.H. Tp(hrs)= 0.13 | Curve Number (CN)= 74.0 | # of Linear Res.(N)= 3.00

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.10	6.083	2.20	12.083	22.05	18.08	2.20
0.167	1.10	6.167	2.20	12.167	22.04	18.17	2.20
0.250	1.10	6.250	2.20	12.250	17.09	18.25	2.20
0.333	1.10	6.333	2.20	12.333	13.78	18.33	2.20
0.417	1.10	6.417	2.20	12.417	13.01	18.42	2.20
0.500	1.10	6.500	2.20	12.500	9.92	18.50	2.20
0.583	1.10	6.583	2.20	12.583	9.92	18.58	2.20
0.667	1.10	6.667	2.20	12.667	9.48	18.67	2.20
0.750	1.10	6.750	2.20	12.750	9.37	18.75	2.20
0.833	1.10	6.833	2.20	12.833	8.27	18.83	2.20
0.917	1.10	6.917	2.20	12.917	6.61	18.92	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.083	1.10	7.083	2.20	13.083	5.51	19.08	1.65
1.167	1.10	7.167	2.20	13.167	5.51	19.17	1.65
1.250	1.10	7.250	2.20	13.250	5.51	19.25	1.65
1.333	1.10	7.333	2.20	13.333	5.51	19.33	1.65
1.417	1.10	7.417	2.20	13.417	5.51	19.42	1.65
1.500	1.10	7.500	2.20	13.500	5.51	19.50	1.65
1.583	1.10	7.583	2.20	13.583	5.51	19.58	1.65
1.667	1.10	7.667	2.20	13.667	5.51	19.67	1.65
1.750	1.10	7.750	2.20	13.750	5.51	19.75	1.65
1.833	1.10	7.833	2.20	13.833	5.51	19.83	1.65
1.917	1.10	7.917	2.20	13.917	5.51	19.92	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.083	1.10	8.083	3.31	14.083	3.31	20.08	1.65
2.167	1.10	8.167	3.31	14.167	3.31	20.17	1.65
2.250	1.10	8.250	3.31	14.250	3.31	20.25	1.65
2.333	1.10	8.333	3.31	14.333	3.31	20.33	1.65
2.417	1.10	8.417	3.31	14.417	3.31	20.42	1.65
2.500	1.10	8.500	3.31	14.500	3.31	20.50	1.65
2.583	1.10	8.583	3.31	14.583	3.31	20.58	1.65
2.667	1.10	8.667	3.31	14.667	3.31	20.67	1.65
2.750	1.10	8.750	3.31	14.750	3.31	20.75	1.65
2.833	1.10	8.833	3.31	14.833	3.31	20.83	1.65
2.917	1.10	8.917	3.31	14.917	3.31	20.92	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.083	1.10	9.083	3.31	15.083	3.31	21.08	1.10

3.167	1.10	9.167	3.31	15.167	3.31	21.17	1.10
3.250	1.10	9.250	3.31	15.250	3.31	21.25	1.10
3.333	1.10	9.333	3.31	15.333	3.31	21.33	1.10
3.417	1.10	9.417	3.31	15.417	3.31	21.42	1.10
3.500	1.10	9.500	3.31	15.500	3.31	21.50	1.10
3.583	1.10	9.583	3.31	15.583	3.31	21.58	1.10
3.667	1.10	9.667	3.31	15.667	3.31	21.67	1.10
3.750	1.10	9.750	3.31	15.750	3.31	21.75	1.10
3.833	1.10	9.833	3.31	15.833	3.31	21.83	1.10
3.917	1.10	9.917	3.31	15.917	3.31	21.92	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.083	2.20	10.083	6.05	16.083	2.20	22.08	1.10
4.167	2.20	10.167	6.05	16.167	2.20	22.17	1.10
4.250	2.20	10.250	6.05	16.250	2.20	22.25	1.10
4.333	2.20	10.333	6.05	16.333	2.20	22.33	1.10
4.417	2.20	10.417	6.05	16.417	2.20	22.42	1.10
4.500	2.20	10.500	6.05	16.500	2.20	22.50	1.10
4.583	2.20	10.583	6.05	16.583	2.20	22.58	1.10
4.667	2.20	10.667	6.05	16.667	2.20	22.67	1.10
4.750	2.20	10.750	6.05	16.750	2.20	22.75	1.10
4.833	2.20	10.833	6.05	16.833	2.20	22.83	1.10
4.917	2.20	10.917	6.05	16.917	2.20	22.92	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.083	2.20	11.083	8.26	17.083	2.20	23.08	1.10
5.167	2.20	11.167	8.26	17.167	2.20	23.17	1.10
5.250	2.20	11.250	10.58	17.250	2.20	23.25	1.10
5.333	2.20	11.333	12.12	17.333	2.20	23.33	1.10
5.417	2.20	11.417	15.20	17.417	2.20	23.42	1.10
5.500	2.20	11.500	27.55	17.500	2.20	23.50	1.10
5.583	2.20	11.583	27.55	17.583	2.20	23.58	1.10
5.667	2.20	11.667	53.99	17.667	2.20	23.67	1.10
5.750	2.20	11.750	60.61	17.750	2.20	23.75	1.10
5.833	2.20	11.833	81.98	17.833	2.20	23.83	1.10
5.917	2.20	11.917	114.06	17.917	2.20	23.92	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	1.10

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.211 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 54.688
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.506

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

CALIB
STANDHYD (0004)
ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.10	6.200	2.20	12.200	22.04	18.20	2.20
0.400	1.10	6.400	2.20	12.400	13.78	18.40	2.20
0.600	1.10	6.600	2.20	12.600	9.92	18.60	2.20
0.800	1.10	6.800	2.20	12.800	9.37	18.80	2.20
1.000	1.10	7.000	2.20	13.000	6.61	19.00	2.20
1.200	1.10	7.200	2.20	13.200	5.51	19.20	1.65
1.400	1.10	7.400	2.20	13.400	5.51	19.40	1.65
1.600	1.10	7.600	2.20	13.600	5.51	19.60	1.65
1.800	1.10	7.800	2.20	13.800	5.51	19.80	1.65
2.000	1.10	8.000	2.20	14.000	5.51	20.00	1.65
2.200	1.10	8.200	3.31	14.200	3.31	20.20	1.65
2.400	1.10	8.400	3.31	14.400	3.31	20.40	1.65
2.600	1.10	8.600	3.31	14.600	3.31	20.60	1.65
2.800	1.10	8.800	3.31	14.800	3.31	20.80	1.65
3.000	1.10	9.000	3.31	15.000	3.31	21.00	1.65
3.200	1.10	9.200	3.31	15.200	3.31	21.20	1.10
3.400	1.10	9.400	3.31	15.400	3.31	21.40	1.10
3.600	1.10	9.600	3.31	15.600	3.31	21.60	1.10
3.800	1.10	9.800	3.31	15.800	3.31	21.80	1.10
4.000	1.10	10.000	3.31	16.000	3.31	22.00	1.10
4.200	2.20	10.200	6.05	16.200	2.20	22.20	1.10
4.400	2.20	10.400	6.05	16.400	2.20	22.40	1.10
4.600	2.20	10.600	6.05	16.600	2.20	22.60	1.10
4.800	2.20	10.800	6.05	16.800	2.20	22.80	1.10
5.000	2.20	11.000	6.05	17.000	2.20	23.00	1.10
5.200	2.20	11.200	8.26	17.200	2.20	23.20	1.10
5.400	2.20	11.400	12.12	17.400	2.20	23.40	1.10
5.600	2.20	11.600	27.55	17.600	2.20	23.60	1.10
5.800	2.20	11.800	60.61	17.800	2.20	23.80	1.10
6.000	2.20	12.000	114.06	18.000	2.20	24.00	0.00

Max.Eff.Inten.(mm/hr)= 114.06 71.61
over (min) 12.00 12.00
Storage Coeff. (min)= 0.96 (ii) 6.28 (ii)
Unit Hyd. Tpeak (min)= 12.00 12.00
Unit Hyd. peak (cms)= 0.14 0.12

				TOTALS
PEAK FLOW	(cms)=	0.29	0.09	0.389 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	106.84	57.82	89.19
TOTAL RAINFALL	(mm)=	107.84	107.84	107.84
RUNOFF COEFFICIENT	=	0.99	0.54	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0063)
ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)= 114.06 71.61
over (min) 12.00 12.00
Storage Coeff. (min)= 0.96 (ii) 6.28 (ii)
Unit Hyd. Tpeak (min)= 12.00 12.00
Unit Hyd. peak (cms)= 0.14 0.12

				TOTALS
PEAK FLOW	(cms)=	0.32	0.47	0.794 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	106.84	57.82	71.55
TOTAL RAINFALL	(mm)=	107.84	107.84	107.84
RUNOFF COEFFICIENT	=	0.99	0.54	0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):		1.45	0.389	12.00	89.19
+ ID2= 2 (0005):		1.33	0.211	12.00	54.69
ID = 3 (0007):		2.78	0.599	12.00	72.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):		2.78	0.599	12.00	72.91
+ ID2= 2 (0063):		3.62	0.794	12.00	71.55
ID = 1 (0007):		6.40	1.393	12.00	72.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.3260	0.8017
DT= 5.0 min	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	1.393	12.00	72.34
OUTFLOW: ID= 1 (0033)	6.400	0.125	12.83	72.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.96
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.2499

ROUTE PIPE (0034)	
IN= 2---> OUT= 1	Pipe Number = 1.00
DT= 5.0 min	Diameter (mm)=1650.00
	Length (m)= 850.00
	Slope (m/m)= 0.005
	Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.12	12.83	72.25	0.15	1.11
OUTFLOW: ID= 1 (0034)	6.40	0.12	13.00	72.25	0.15	1.11

CALIB			
NASHYD (0035)	Area (ha)= 8.03	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.22		

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 1.002 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 53.114
TOTAL RAINFALL (mm)= 107.844
RUNOFF COEFFICIENT = 0.493

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

CALIB			
NASHYD (0037)	Area (ha)= 10.64	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.24		

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 1.247 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 53.632
TOTAL RAINFALL (mm)= 107.844
RUNOFF COEFFICIENT = 0.497

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

CALIB			
NASHYD (0038)	Area (ha)= 2.11	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.231 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 53.992
TOTAL RAINFALL (mm)= 107.844
RUNOFF COEFFICIENT = 0.501

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

CALIB			
STANDHYD (0036)	Area (ha)= 17.98		
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00	

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	10.97	7.01	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	114.06	71.61	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	3.47	1.27	4.746 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	106.84	57.82	87.72
TOTAL RAINFALL (mm)=	107.84	107.84	107.84
RUNOFF COEFFICIENT =	0.99	0.54	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0039)	Area (ha)= 1.21		
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00	

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.67	0.54	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	114.06	71.61	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	0.21	0.10	0.310 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	106.84	57.82	84.78
TOTAL RAINFALL (mm)=	107.84	107.84	107.84
RUNOFF COEFFICIENT =	0.99	0.54	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)					
Inlet Cap.=0.169					
#of Inlets= 1					
Total(cms)= 0.2		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	TOTAL HYD.(ID= 1):	1.21	0.31	12.00	84.78
	MAJOR SYS.(ID= 2):	0.12	0.14	12.00	84.78
	MINOR SYS.(ID= 3):	1.09	0.17	12.00	84.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0047)	Area (ha)= 1.50			
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00		
		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		114.06	71.61	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.30	0.10	0.402 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	106.84	57.82	89.19
TOTAL RAINFALL	(mm)=	107.84	107.84	107.84
RUNOFF COEFFICIENT	=	0.99	0.54	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)					
Inlet Cap.=0.363					
#of Inlets= 1					
Total(cms)= 0.4		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	TOTAL HYD.(ID= 1):	1.50	0.40	12.00	89.19
	MAJOR SYS.(ID= 2):	0.03	0.04	12.00	89.19
	MINOR SYS.(ID= 3):	1.47	0.36	12.00	89.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0035):	8.03	1.002	12.00	53.11
+	ID2= 2 (0036):	17.98	4.746	12.00	87.72
	ID = 3 (0040):	26.01	5.748	12.00	77.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0040):	26.01	5.748	12.00	77.04
+	ID2= 2 (0037):	10.64	1.247	12.00	53.63
	ID = 1 (0040):	36.65	6.995	12.00	70.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	36.65	6.995	12.00	70.24
+	ID2= 2 (0038):	2.11	0.231	12.00	53.99
	ID = 3 (0040):	38.76	7.226	12.00	69.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0040):	38.76	7.226	12.00	69.36
+	ID2= 2 (0072):	0.03	0.039	12.00	89.19
	ID = 1 (0040):	38.79	7.265	12.00	69.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	38.79	7.265	12.00	69.38
+	ID2= 2 (0074):	0.12	0.141	12.00	84.78
	ID = 3 (0040):	38.91	7.405	12.00	69.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0034):	6.40	0.124	13.00	72.25
+	ID2= 2 (0040):	38.91	7.405	12.00	69.42
	ID = 3 (0041):	45.31	7.450	12.00	70.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	3.1150	0.9004
	1.2740	0.5550	3.6250	1.1600
	2.2650	0.7154	3.9640	1.3570

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0041)	45.311	7.450	12.00	70.08
OUTFLOW:	ID= 1 (0043)	45.311	2.890	12.25	70.08

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.79
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.8522

CALIB				
NASHYD (0044)	Area (ha)= 3.28	Curve Number (CN)= 74.0		
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.10			

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.383 (i)

```
     TIME TO PEAK     (hrs)=  12.000
     RUNOFF VOLUME     (mm)=  34.737
     TOTAL RAINFALL    (mm)= 107.844
     RUNOFF COEFFICIENT    =   0.322

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.267 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  53.397
     TOTAL RAINFALL   (mm)= 107.844
     RUNOFF COEFFICIENT    =   0.495

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

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--------------------
| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.71         3.45
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       2.12         0.63      2.751 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82      90.18
     TOTAL RAINFALL   (mm)=     107.84       107.84     107.84
     RUNOFF COEFFICIENT    =       0.99         0.54       0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.86         0.41
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.27         0.07      0.347 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82      91.16
     TOTAL RAINFALL   (mm)=     107.84       107.84     107.84
     RUNOFF COEFFICIENT    =       0.99         0.54       0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.27      0.35     12.00    91.16
     ================================================
     MAJOR SYS.(ID= 2):   0.02      0.03     12.00    91.16
     MINOR SYS.(ID= 3):   1.25      0.32     12.00    91.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0070) |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38         1.12
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.44         0.20      0.640 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00      12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82      84.78
     TOTAL RAINFALL   (mm)=     107.84       107.84     107.84
     RUNOFF COEFFICIENT    =       0.99         0.54       0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0071) |
| Inlet Cap.=0.550 |
| #of Inlets=    1 |
| Total(cms)=  0.6 |       AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.50      0.64     12.00    84.78
     ================================================
     MAJOR SYS.(ID= 2):   0.08      0.09     12.00    84.78
     MINOR SYS.(ID= 3):   2.42      0.55     12.00    84.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0044):     3.28    0.383    12.00    34.74
        + ID2= 2 (0045):    10.16    2.751    12.00    90.18
          ================================================
          ID = 3 (0048):    13.44    3.134    12.00    76.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):    13.44    3.134    12.00    76.65
        + ID2= 2 (0046):     2.21    0.267    12.00    53.40
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          ================================================
          ID = 1 (0048):    15.65   3.401    12.00    73.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):    15.65   3.401    12.00    73.36
        + ID2= 2 (0069):     1.25   0.320    12.00    91.16
          ================================================
          ID = 3 (0048):    16.90   3.721    12.00    74.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):    16.90   3.721    12.00    74.68
        + ID2= 2 (0071):     2.42   0.550    12.00    84.78
          ================================================
          ID = 1 (0048):    19.32   4.271    12.00    75.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):    19.32   4.271    12.00    75.95
        + ID2= 2 (0072):     1.47   0.363    12.00    89.19
          ================================================
          ID = 3 (0048):    20.79   4.634    12.00    76.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   0.9630      0.3823
                          0.5430     0.1233    |   1.3030      0.6907
                          0.7650     0.2343    |   1.5860      1.0977

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0048)   20.791     4.634     12.00      76.88
     OUTFLOW: ID= 1 (0049)   20.791     1.103     12.30      76.88

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.79
                    TIME SHIFT OF PEAK FLOW          (min)= 18.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.5107

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| ROUTE PIPE (0050)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 467.00
--------------------     Slope      (m/m)=  0.006
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME    FLOW RATE    VELOCITY    TRAV.TIME
         (m)     (cu.m.)      (cms)        (m/s)        min
        0.09    .201E+02        0.0         0.88         8.87
        0.17    .560E+02        0.2         1.37         5.68
        0.26    .101E+03        0.4         1.76         4.42
        0.35    .153E+03        0.7         2.09         3.72
        0.43    .210E+03        1.1         2.38         3.27
        0.52    .270E+03        1.5         2.64         2.95
        0.61    .334E+03        2.0         2.86         2.72
        0.69    .399E+03        2.6         3.06         2.55
        0.78    .466E+03        3.2         3.23         2.41
        0.87    .533E+03        3.9         3.38         2.31
        0.96    .599E+03        4.5         3.50         2.22
        1.04    .665E+03        5.1         3.60         2.16
        1.13    .728E+03        5.7         3.68         2.11
        1.22    .789E+03        6.3         3.74         2.08
        1.30    .846E+03        6.8         3.76         2.07
        1.39    .897E+03        7.2         3.76         2.07
        1.48    .943E+03        7.5         3.72         2.09
        1.56    .978E+03        7.6         3.63         2.15
        1.65    .999E+03        7.1         3.30         2.36

                                <---- hydrograph ---->   <-pipe / channel->
                                 AREA    QPEAK   TPEAK   R.V.   MAX DEPTH  MAX VEL
                                 (ha)    (cms)   (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0049)     20.79     1.10    12.30   76.88      0.44      2.40
     OUTFLOW: ID= 1 (0050)     20.79     1.11    12.30   76.88      0.44      2.40

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| CALIB            |
| NASHYD    (0054) |   Area     (ha)=   1.34   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=    0.233

     PEAK FLOW       (cms)=    0.167 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   53.113
     TOTAL RAINFALL   (mm)=  107.844
     RUNOFF COEFFICIENT    =    0.492

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

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--------------------
| CALIB            |
| NASHYD    (0056) |   Area     (ha)=   0.10   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.05

     Unit Hyd Qpeak  (cms)=    0.076

     PEAK FLOW       (cms)=    0.002 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=    4.735
     TOTAL RAINFALL   (mm)=  107.844
     RUNOFF COEFFICIENT    =    0.044

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

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--------------------
| CALIB            |
| NASHYD    (0058) |   Area     (ha)=   2.51   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=    0.355

     PEAK FLOW       (cms)=    0.266 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   54.130
     TOTAL RAINFALL   (mm)=  107.844
     RUNOFF COEFFICIENT    =    0.502

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

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--------------------
| CALIB            |
| STANDHYD  (0057) |   Area     (ha)=   0.47
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.33          0.14
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n             =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=      114.06         71.61
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       0.96 (ii)     6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.10          0.03          0.130 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
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     RUNOFF VOLUME     (mm)=     106.84        57.82          92.13
     TOTAL RAINFALL    (mm)=     107.84       107.84         107.84
     RUNOFF COEFFICIENT   =       0.99         0.54           0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0073) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0057):     0.47   0.130    12.00    92.13
       + ID2= 2 (0058):     2.51   0.266    12.00    54.13
         ================================================
         ID = 3 (0073):     2.98   0.396    12.00    60.12

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| DUHYD     (0066) |
| Inlet Cap.=0.181 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.98      0.40     12.00    60.12
     ================================================
     MAJOR SYS.(ID= 2):   0.37      0.21     12.00    60.12
     MINOR SYS.(ID= 3):   2.61      0.18     12.00    60.12

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0053) |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.04         0.47          1.507 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82         85.27
     TOTAL RAINFALL   (mm)=     107.84       107.84        107.84
     RUNOFF COEFFICIENT   =       0.99         0.54          0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0055) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.21         0.37          0.583 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82         70.08
     TOTAL RAINFALL   (mm)=     107.84       107.84        107.84
     RUNOFF COEFFICIENT   =       0.99         0.54          0.65

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0065) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.21         0.37          0.583 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     106.84        57.82         70.08
     TOTAL RAINFALL   (mm)=     107.84       107.84        107.84
     RUNOFF COEFFICIENT   =       0.99         0.54          0.65

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0053):     5.86   1.507    12.00    85.27
       + ID2= 2 (0054):     1.34   0.167    12.00    53.11
         ================================================
         ID = 3 (0051):     7.20   1.674    12.00    79.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0051):     7.20   1.674    12.00    79.29
       + ID2= 2 (0055):     2.71   0.583    12.00    70.08
         ================================================
         ID = 1 (0051):     9.91   2.257    12.00    76.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0051):     9.91   2.257    12.00    76.77
       + ID2= 2 (0056):     0.10   0.002    12.00     4.74
```

```
          ================================================
          ID = 3 (0051):    10.01   2.259    12.00    76.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0051) |
|   3 +  2 =   1   |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0051):    10.01   2.259    12.00    76.05
        + ID2= 2 (0065):     2.71   0.583    12.00    70.08
          ================================================
          ID = 1 (0051):    12.72   2.842    12.00    74.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0051) |
|   1 +  2 =   3   |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0051):    12.72   2.842    12.00    74.78
        + ID2= 2 (0066):     2.61   0.181    12.00    60.12
          ================================================
          ID = 3 (0051):    15.33   3.023    12.00    72.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0051) |
|   3 +  2 =   1   |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0051):    15.33   3.023    12.00    72.28
        + ID2= 2 (0069):     0.02   0.027    12.00    91.16
          ================================================
          ID = 1 (0051):    15.35   3.050    12.00    72.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0060) |
|   1 +  2 =   3   |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0050):    20.79   1.106    12.30    76.88
        + ID2= 2 (0051):    15.35   3.050    12.00    72.31
          ================================================
          ID = 3 (0060):    36.15   3.932    12.00    74.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |    0.5100     0.3577
                          0.2970     0.1233    |    0.6800     0.7154
                          0.4250     0.2220    |    0.7930     1.1964

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0060)    36.145     3.932     12.00      74.95
     OUTFLOW: ID= 1 (0061)    36.145     0.740     14.20      74.94

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 18.82
                    TIME SHIFT OF PEAK FLOW          (min)=132.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.9702

--------------------------------------------------------------------------------
  ****************************
  ** SIMULATION NUMBER:   6 **
  ****************************


--------------------
|    READ STORM    |    Filename: C:\Users\DMcBrayne\AppD
|                  |              ata\Local\Temp\
|                  |              122dfadb-b082-4939-8279-0906fc8de536\86a632a5
```

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| Ptotal=112.42 mm |    Comments: SCS TYPE II TWENTY FOUR HOUR, HUNDRED YE
--------------------
      TIME    RAIN  |   TIME    RAIN  |'  TIME    RAIN  |   TIME    RAIN
       hrs   mm/hr  |    hrs   mm/hr  |'   hrs   mm/hr  |    hrs   mm/hr
      0.20    1.27  |   6.20    2.29  |  12.20   21.84  |  18.20    2.29
      0.40    1.27  |   6.40    2.29  |  12.40   13.72  |  18.40    2.29
      0.60    1.27  |   6.60    2.29  |  12.60    9.91  |  18.60    2.29
      0.80    1.27  |   6.80    2.29  |  12.80    9.40  |  18.80    2.29
      1.00    1.27  |   7.00    2.29  |  13.00    6.60  |  19.00    2.29
      1.20    1.27  |   7.20    2.29  |  13.20    5.59  |  19.20    1.78
      1.40    1.27  |   7.40    2.29  |  13.40    5.59  |  19.40    1.78
      1.60    1.27  |   7.60    2.29  |  13.60    5.59  |  19.60    1.78
      1.80    1.27  |   7.80    2.29  |  13.80    5.59  |  19.80    1.78
      2.00    1.27  |   8.00    2.29  |  14.00    5.59  |  20.00    1.78
      2.20    1.27  |   8.20    3.30  |  14.20    3.30  |  20.20    1.78
      2.40    1.27  |   8.40    3.30  |  14.40    3.30  |  20.40    1.78
      2.60    1.27  |   8.60    3.30  |  14.60    3.30  |  20.60    1.78
      2.80    1.27  |   8.80    3.30  |  14.80    3.30  |  20.80    1.78
      3.00    1.27  |   9.00    3.30  |  15.00    3.30  |  21.00    1.78
      3.20    1.27  |   9.20    3.30  |  15.20    3.30  |  21.20    1.27
      3.40    1.27  |   9.40    3.30  |  15.40    3.30  |  21.40    1.27
      3.60    1.27  |   9.60    3.30  |  15.60    3.30  |  21.60    1.27
      3.80    1.27  |   9.80    3.30  |  15.80    3.30  |  21.80    1.27
      4.00    1.27  |  10.00    3.30  |  16.00    3.30  |  22.00    1.27
      4.20    2.29  |  10.20    6.10  |  16.20    2.29  |  22.20    1.27
      4.40    2.29  |  10.40    6.10  |  16.40    2.29  |  22.40    1.27
      4.60    2.29  |  10.60    6.10  |  16.60    2.29  |  22.60    1.27
      4.80    2.29  |  10.80    6.10  |  16.80    2.29  |  22.80    1.27
      5.00    2.29  |  11.00    6.10  |  17.00    2.29  |  23.00    1.27
      5.20    2.29  |  11.20    8.13  |  17.20    2.29  |  23.20    1.27
      5.40    2.29  |  11.40   11.94  |  17.40    2.29  |  23.40    1.27
      5.60    2.29  |  11.60   27.43  |  17.60    2.29  |  23.60    1.27
      5.80    2.29  |  11.80   59.94  |  17.80    2.29  |  23.80    1.27
      6.00    2.29  |  12.00  126.49  |  18.00    2.29  |  24.00    1.27

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--------------------
| CALIB            |
| NASHYD    (0011) |   Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=    0.204

     PEAK FLOW       (cms)=    0.142 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   53.705
     TOTAL RAINFALL   (mm)=  112.420
     RUNOFF COEFFICIENT   =    0.478

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

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--------------------
| CALIB            |
| STANDHYD  (0010) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=        2.36          1.51
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      126.49         80.66
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.83          0.31          1.138 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00         12.00
     RUNOFF VOLUME    (mm)=      111.42         61.47         91.94
     TOTAL RAINFALL   (mm)=      112.42        112.42        112.42
     RUNOFF COEFFICIENT   =        0.99          0.55          0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB            |
| STANDHYD  (0012) |   Area    (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.18         2.68
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     213.85        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     126.49        80.66
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       2.98 (ii)    8.05 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.46         0.51          1.966 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=     111.42        61.47          91.94
     TOTAL RAINFALL   (mm)=     112.42       112.42         112.42
     RUNOFF COEFFICIENT   =       0.99         0.55           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0064) |   Area    (ha)=   2.95
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.74         2.21
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     126.49        80.66
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.26         0.45          0.712 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=     111.42        61.47          73.95
     TOTAL RAINFALL   (mm)=     112.42       112.42         112.42
     RUNOFF COEFFICIENT   =       0.99         0.55           0.66

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0013) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0010):     3.87   1.138    12.00    91.94
       + ID2= 2 (0011):     0.91   0.142    12.00    53.70
         ================================================
         ID = 3 (0013):     4.78   1.281    12.00    84.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0013) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0013):     4.78   1.281    12.00    84.66
       + ID2= 2 (0012):     6.86   1.966    12.00    91.94
         ================================================
         ID = 1 (0013):    11.64   3.247    12.00    88.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0013) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0013):    11.64   3.247    12.00    88.95
       + ID2= 2 (0064):     2.95   0.712    12.00    73.95
         ================================================
         ID = 3 (0013):    14.59   3.959    12.00    85.92

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0021) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   0.6510      0.4563
                          0.1220     0.1110    |   0.8770      0.7650
                          0.3620     0.2096    |   0.0000      0.0000

                              AREA     QPEAK     TPEAK        R.V.
                              (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0013)   14.590     3.959     12.00       85.92
     OUTFLOW: ID= 1 (0021)   14.590     0.698     12.30       85.90

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 17.62
                TIME SHIFT OF PEAK FLOW         (min)= 18.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.5210

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--------------------
| ROUTE PIPE (0031)|     PIPE Number    =    1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 500.00
--------------------     Slope       (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)        min
        0.09    .216E+02         0.0          0.80       10.40
        0.17    .600E+02         0.1          1.25        6.67
        0.26    .108E+03         0.3          1.61        5.18
        0.35    .164E+03         0.6          1.91        4.36
        0.43    .225E+03         1.0          2.18        3.83
        0.52    .290E+03         1.4          2.41        3.46
        0.61    .358E+03         1.9          2.61        3.19
        0.69    .428E+03         2.4          2.79        2.99
        0.78    .499E+03         2.9          2.95        2.83
        0.87    .570E+03         3.5          3.08        2.70
        0.96    .642E+03         4.1          3.20        2.61
        1.04    .712E+03         4.7          3.29        2.53
        1.13    .780E+03         5.2          3.36        2.48
        1.22    .844E+03         5.8          3.41        2.44
        1.30    .905E+03         6.2          3.44        2.43
        1.39    .961E+03         6.6          3.43        2.43
        1.48    .101E+04         6.9          3.40        2.45
        1.56    .105E+04         6.9          3.31        2.52
        1.65    .107E+04         6.5          3.02        2.76
                                          <---- hydrograph ---->   <-pipe / channel->
                               AREA    QPEAK    TPEAK    R.V.    MAX DEPTH  MAX VEL
                               (ha)    (cms)    (hrs)    (mm)       (m)       (m/s)
     INFLOW : ID= 2 (0021)   14.59     0.70    12.30   85.90       0.36      1.96
     OUTFLOW: ID= 1 (0031)   14.59     0.70    12.40   85.90       0.36      1.96

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--------------------
| CALIB            |
| NASHYD    (0016) |   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.977 (i)
     TIME TO PEAK    (hrs)=  12.000
```

RUNOFF VOLUME (mm)= 55.233
TOTAL RAINFALL (mm)= 112.420
RUNOFF COEFFICIENT = 0.491

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

CALIB STANDHYD (0018) ID= 1 DT=12.0 min	Area (ha)= 0.97 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.62	0.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	126.49	80.66
over (min)	12.00	12.00
Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

			TOTALS
PEAK FLOW	(cms)=	0.22	0.07	0.290 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	93.44
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0017) ID= 1 DT=12.0 min	Area (ha)= 2.34 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.29	1.05
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	126.49	80.66
over (min)	12.00	12.00
Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

			TOTALS
PEAK FLOW	(cms)=	0.45	0.22	0.668 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	88.94
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.977	12.00	55.23
+ ID2= 2 (0017):	2.34	0.668	12.00	88.94
ID = 3 (0019):	8.87	1.645	12.00	64.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	1.645	12.00	64.12
+ ID2= 2 (0018):	0.97	0.290	12.00	93.44
ID = 1 (0019):	9.84	1.935	12.00	67.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	1.935	12.00	67.01
+ ID2= 2 (0031):	14.59	0.698	12.40	85.90
ID = 3 (0032):	24.43	2.430	12.00	78.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4564
	0.1220	0.0863	0.8770	0.7894
	0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	2.430	12.00	78.29
OUTFLOW: ID= 1 (0022)	24.430	0.666	13.60	78.29

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.39
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4781

CALIB NASHYD (0023) ID= 1 DT=12.0 min	Area (ha)= 10.18 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 1.174 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 57.680
TOTAL RAINFALL (mm)= 112.420
RUNOFF COEFFICIENT = 0.513

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

CALIB NASHYD (0025) ID= 1 DT=12.0 min	Area (ha)= 2.59 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.355 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 56.597
TOTAL RAINFALL (mm)= 112.420
RUNOFF COEFFICIENT = 0.503

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

CALIB NASHYD (0027) ID= 1 DT=12.0 min	Area (ha)= 1.61 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

```
     PEAK FLOW       (cms)=   0.253 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  47.484
     TOTAL RAINFALL   (mm)= 112.420
     RUNOFF COEFFICIENT   =   0.422

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

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--------------------
| CALIB            |
| STANDHYD  (0024) |   Area    (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.76         1.95
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    126.49        80.66
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      1.67         0.40         2.072 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00        12.00
     RUNOFF VOLUME    (mm)=    111.42        61.47        96.93
     TOTAL RAINFALL   (mm)=    112.42       112.42       112.42
     RUNOFF COEFFICIENT   =      0.99         0.55         0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0062) |   Area    (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.24         0.61
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    126.49        80.66
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.08         0.13         0.209 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00        12.00
     RUNOFF VOLUME    (mm)=    111.42        61.47        75.45
     TOTAL RAINFALL   (mm)=    112.42       112.42       112.42
     RUNOFF COEFFICIENT   =      0.99         0.55         0.67

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0023):    10.18   1.174    12.00    57.68
        + ID2= 2 (0024):     6.71   2.072    12.00    96.93
          ================================================
          ID = 3 (0028):    16.89   3.247    12.00    73.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0028):    16.89   3.247    12.00    73.27
        + ID2= 2 (0025):     2.59   0.355    12.00    56.60
          ================================================
          ID = 1 (0028):    19.48   3.601    12.00    71.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0028):    19.48   3.601    12.00    71.06
        + ID2= 2 (0027):     1.61   0.253    12.00    47.48
          ================================================
          ID = 3 (0028):    21.09   3.854    12.00    69.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0028):    21.09   3.854    12.00    69.26
        + ID2= 2 (0062):     0.85   0.209    12.00    75.45
          ================================================
          ID = 1 (0028):    21.94   4.063    12.00    69.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0029) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0022):    24.43   0.666    13.60    78.29
        + ID2= 2 (0028):    21.94   4.063    12.00    69.50
          ================================================
          ID = 3 (0029):    46.37   4.506    12.00    74.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0030) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |     (cms)     (ha.m.)
                         0.0000     0.0000     |    1.3030     1.3940
                         0.4380     0.4440     |    1.5000     1.8008
                         0.9910     1.0000     |    1.7560     2.3930

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0029)     46.370     4.506     12.00      74.16
     OUTFLOW: ID= 1 (0030)     46.370     0.915     14.00      74.15

          PEAK   FLOW   REDUCTION [Qout/Qin](%)= 20.31
          TIME SHIFT OF PEAK FLOW          (min)=120.00
          MAXIMUM  STORAGE   USED        (ha.m.)=  0.9240

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--------------------
| CALIB            |
| NASHYD    (0005) |   Area     (ha)=   1.33   Curve Number    (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

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

                              ---- TRANSFORMED HYETOGRAPH ----
     TIME    RAIN  |  TIME    RAIN  |'  TIME    RAIN  |  TIME    RAIN
      hrs   mm/hr  |   hrs   mm/hr  |'   hrs   mm/hr  |   hrs   mm/hr
```

0.083	1.27	6.083	2.29	12.083	21.86	18.08	2.29
0.167	1.27	6.167	2.29	12.167	21.84	18.17	2.29
0.250	1.27	6.250	2.29	12.250	16.97	18.25	2.29
0.333	1.27	6.333	2.29	12.333	13.72	18.33	2.29
0.417	1.27	6.417	2.29	12.417	12.95	18.42	2.29
0.500	1.27	6.500	2.29	12.500	9.91	18.50	2.29
0.583	1.27	6.583	2.29	12.583	9.91	18.58	2.29
0.667	1.27	6.667	2.29	12.667	9.50	18.67	2.29
0.750	1.27	6.750	2.29	12.750	9.40	18.75	2.29
0.833	1.27	6.833	2.29	12.833	8.28	18.83	2.29
0.917	1.27	6.917	2.29	12.917	6.60	18.92	2.29
1.000	1.27	7.000	2.29	13.000	6.60	19.00	2.29
1.083	1.27	7.083	2.29	13.083	5.59	19.08	1.78
1.167	1.27	7.167	2.29	13.167	5.59	19.17	1.78
1.250	1.27	7.250	2.29	13.250	5.59	19.25	1.78
1.333	1.27	7.333	2.29	13.333	5.59	19.33	1.78
1.417	1.27	7.417	2.29	13.417	5.59	19.42	1.78
1.500	1.27	7.500	2.29	13.500	5.59	19.50	1.78
1.583	1.27	7.583	2.29	13.583	5.59	19.58	1.78
1.667	1.27	7.667	2.29	13.667	5.59	19.67	1.78
1.750	1.27	7.750	2.29	13.750	5.59	19.75	1.78
1.833	1.27	7.833	2.29	13.833	5.59	19.83	1.78
1.917	1.27	7.917	2.29	13.917	5.59	19.92	1.78
2.000	1.27	8.000	2.29	14.000	5.59	20.00	1.78
2.083	1.27	8.083	3.30	14.083	3.30	20.08	1.78
2.167	1.27	8.167	3.30	14.167	3.30	20.17	1.78
2.250	1.27	8.250	3.30	14.250	3.30	20.25	1.78
2.333	1.27	8.333	3.30	14.333	3.30	20.33	1.78
2.417	1.27	8.417	3.30	14.417	3.30	20.42	1.78
2.500	1.27	8.500	3.30	14.500	3.30	20.50	1.78
2.583	1.27	8.583	3.30	14.583	3.30	20.58	1.78
2.667	1.27	8.667	3.30	14.667	3.30	20.67	1.78
2.750	1.27	8.750	3.30	14.750	3.30	20.75	1.78
2.833	1.27	8.833	3.30	14.833	3.30	20.83	1.78
2.917	1.27	8.917	3.30	14.917	3.30	20.92	1.78
3.000	1.27	9.000	3.30	15.000	3.30	21.00	1.78
3.083	1.27	9.083	3.30	15.083	3.30	21.08	1.27
3.167	1.27	9.167	3.30	15.167	3.30	21.17	1.27
3.250	1.27	9.250	3.30	15.250	3.30	21.25	1.27
3.333	1.27	9.333	3.30	15.333	3.30	21.33	1.27
3.417	1.27	9.417	3.30	15.417	3.30	21.42	1.27
3.500	1.27	9.500	3.30	15.500	3.30	21.50	1.27
3.583	1.27	9.583	3.30	15.583	3.30	21.58	1.27
3.667	1.27	9.667	3.30	15.667	3.30	21.67	1.27
3.750	1.27	9.750	3.30	15.750	3.30	21.75	1.27
3.833	1.27	9.833	3.30	15.833	3.30	21.83	1.27
3.917	1.27	9.917	3.30	15.917	3.30	21.92	1.27
4.000	1.27	10.000	3.30	16.000	3.30	22.00	1.27
4.083	2.29	10.083	6.10	16.083	2.29	22.08	1.27
4.167	2.29	10.167	6.10	16.167	2.29	22.17	1.27
4.250	2.29	10.250	6.10	16.250	2.29	22.25	1.27
4.333	2.29	10.333	6.10	16.333	2.29	22.33	1.27
4.417	2.29	10.417	6.10	16.417	2.29	22.42	1.27
4.500	2.29	10.500	6.10	16.500	2.29	22.50	1.27
4.583	2.29	10.583	6.10	16.583	2.29	22.58	1.27
4.667	2.29	10.667	6.10	16.667	2.29	22.67	1.27
4.750	2.29	10.750	6.10	16.750	2.29	22.75	1.27
4.833	2.29	10.833	6.10	16.833	2.29	22.83	1.27
4.917	2.29	10.917	6.10	16.917	2.29	22.92	1.27
5.000	2.29	11.000	6.10	17.000	2.29	23.00	1.27
5.083	2.29	11.083	8.13	17.083	2.29	23.08	1.27
5.167	2.29	11.167	8.13	17.167	2.29	23.17	1.27
5.250	2.29	11.250	10.41	17.250	2.29	23.25	1.27
5.333	2.29	11.333	11.94	17.333	2.29	23.33	1.27
5.417	2.29	11.417	15.04	17.417	2.29	23.42	1.27
5.500	2.29	11.500	27.43	17.500	2.29	23.50	1.27
5.583	2.29	11.583	27.43	17.583	2.29	23.58	1.27
5.667	2.29	11.667	53.44	17.667	2.29	23.67	1.27
5.750	2.29	11.750	59.94	17.750	2.29	23.75	1.27
5.833	2.29	11.833	86.56	17.833	2.29	23.83	1.27
5.917	2.29	11.917	126.49	17.917	2.29	23.92	1.27
6.000	2.29	12.000	126.49	18.000	2.29	24.00	1.27

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.234 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 58.093
TOTAL RAINFALL (mm)= 112.421
RUNOFF COEFFICIENT = 0.517

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

CALIB

STANDHYD (0004)	Area (ha)= 1.45
ID= 1 DT=12.0 min	Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.27	6.200	2.29	12.200	21.85	18.20	2.29
0.400	1.27	6.400	2.29	12.400	13.72	18.40	2.29
0.600	1.27	6.600	2.29	12.600	9.91	18.60	2.29
0.800	1.27	6.800	2.29	12.800	9.40	18.80	2.29
1.000	1.27	7.000	2.29	13.000	6.60	19.00	2.29
1.200	1.27	7.200	2.29	13.200	5.59	19.20	1.78
1.400	1.27	7.400	2.29	13.400	5.59	19.40	1.78
1.600	1.27	7.600	2.29	13.600	5.59	19.60	1.78
1.800	1.27	7.800	2.29	13.800	5.59	19.80	1.78
2.000	1.27	8.000	2.29	14.000	5.59	20.00	1.78
2.200	1.27	8.200	3.30	14.200	3.30	20.20	1.78
2.400	1.27	8.400	3.30	14.400	3.30	20.40	1.78
2.600	1.27	8.600	3.30	14.600	3.30	20.60	1.78
2.800	1.27	8.800	3.30	14.800	3.30	20.80	1.78
3.000	1.27	9.000	3.30	15.000	3.30	21.00	1.78
3.200	1.27	9.200	3.30	15.200	3.30	21.20	1.27
3.400	1.27	9.400	3.30	15.400	3.30	21.40	1.27
3.600	1.27	9.600	3.30	15.600	3.30	21.60	1.27
3.800	1.27	9.800	3.30	15.800	3.30	21.80	1.27
4.000	1.27	10.000	3.30	16.000	3.30	22.00	1.27
4.200	2.29	10.200	6.10	16.200	2.29	22.20	1.27
4.400	2.29	10.400	6.10	16.400	2.29	22.40	1.27
4.600	2.29	10.600	6.10	16.600	2.29	22.60	1.27
4.800	2.29	10.800	6.10	16.800	2.29	22.80	1.27
5.000	2.29	11.000	6.10	17.000	2.29	23.00	1.27
5.200	2.29	11.200	8.13	17.200	2.29	23.20	1.27
5.400	2.29	11.400	11.94	17.400	2.29	23.40	1.27
5.600	2.29	11.600	27.43	17.600	2.29	23.60	1.27
5.800	2.29	11.800	59.94	17.800	2.29	23.80	1.27
6.000	2.29	12.000	126.49	18.000	2.29	24.00	0.00

				TOTALS
Max.Eff.Inten.	(mm/hr)=	126.49	80.66	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
PEAK FLOW	(cms)=	0.33	0.11	0.433 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.17	61.26	93.20
TOTAL RAINFALL	(mm)=	112.17	112.17	112.17
RUNOFF COEFFICIENT	=	0.99	0.55	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB

STANDHYD (0063)	Area (ha)= 3.62
ID= 1 DT=12.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

				TOTALS
Max.Eff.Inten.	(mm/hr)=	126.49	80.66	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	

PEAK FLOW	(cms)=	0.36	0.53	0.890 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.17	61.26	75.24
TOTAL RAINFALL	(mm)=	112.17	112.17	112.17
RUNOFF COEFFICIENT	=	0.99	0.55	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.433	12.00	93.20
+ ID2= 2 (0005):	1.33	0.234	12.00	58.09
ID = 3 (0007):	2.78	0.667	12.00	76.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.667	12.00	76.68
+ ID2= 2 (0063):	3.62	0.890	12.00	75.24
ID = 1 (0007):	6.40	1.556	12.00	76.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	1.556	12.00	76.11
OUTFLOW: ID= 1 (0033)	6.400	0.133	12.83	76.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.58
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.2622

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.13	12.83	76.02	0.16	1.16
OUTFLOW: ID= 1 (0034)	6.40	0.13	12.92	76.01	0.16	1.15

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 1.100 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 56.403
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.503

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 1.364 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 56.954
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.508

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.252 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 57.335
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.511

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	126.49	80.66	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	3.85	1.44	5.289 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.17	61.26	91.70
TOTAL RAINFALL	(mm)=	112.17	112.17	112.17
RUNOFF COEFFICIENT	=	0.99	0.55	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0039) ID= 1 DT=12.0 min	Area (ha)= 1.21 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.67	0.54	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	126.49	80.66	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
		TOTALS	
PEAK FLOW (cms)=	0.23	0.11	0.345 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	111.17	61.26	88.71
TOTAL RAINFALL (mm)=	112.17	112.17	112.17
RUNOFF COEFFICIENT =	0.99	0.55	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074) Inlet Cap.=0.169 #of Inlets= 1 Total(cms)= 0.2	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.35	12.00	88.71
MAJOR SYS.(ID= 2):	0.14	0.18	12.00	88.71
MINOR SYS.(ID= 3):	1.07	0.17	12.00	88.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0047) ID= 1 DT=12.0 min	Area (ha)= 1.50 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.96	0.54	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	126.49	80.66	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
		TOTALS	
PEAK FLOW (cms)=	0.34	0.11	0.448 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	111.17	61.26	93.20
TOTAL RAINFALL (mm)=	112.17	112.17	112.17
RUNOFF COEFFICIENT =	0.99	0.55	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072) Inlet Cap.=0.363 #of Inlets= 1 Total(cms)= 0.4	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.45	12.00	93.20
MAJOR SYS.(ID= 2):	0.07	0.08	12.00	93.20
MINOR SYS.(ID= 3):	1.43	0.36	12.00	93.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	8.03	1.100	12.00	56.40
+ ID2= 2 (0036):	17.98	5.289	12.00	91.70
ID = 3 (0040):	26.01	6.389	12.00	80.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	26.01	6.389	12.00	80.81
+ ID2= 2 (0037):	10.64	1.364	12.00	56.95
ID = 1 (0040):	36.65	7.753	12.00	73.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	36.65	7.753	12.00	73.88
+ ID2= 2 (0038):	2.11	0.252	12.00	57.34
ID = 3 (0040):	38.76	8.005	12.00	72.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	38.76	8.005	12.00	72.98
+ ID2= 2 (0072):	0.07	0.085	12.00	93.20
ID = 1 (0040):	38.83	8.090	12.00	73.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	38.83	8.090	12.00	73.01
+ ID2= 2 (0074):	0.14	0.176	12.00	88.71
ID = 3 (0040):	38.97	8.267	12.00	73.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041) 1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.

```
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0034):     6.40   0.133    12.92    76.01
       + ID2= 2 (0040):    38.97   8.267    12.00    73.07
         ================================================
         ID = 3 (0041):    45.37   8.313    12.00    73.80

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)     |    (cms)     (ha.m.)
                          0.0000     0.0000     |   3.1150      0.9004
                          1.2740     0.5550     |   3.6250      1.1600
                          2.2650     0.7154     |   3.9640      1.3570

                               AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
    INFLOW : ID= 2 (0041)     45.369     8.313     12.00      73.80
    OUTFLOW: ID= 1 (0043)     45.369     3.121     12.25      73.80

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 37.55
                  TIME SHIFT OF PEAK FLOW          (min)= 15.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.9055

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| NASHYD   (0044) |   Area     (ha)=   3.28   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

    Unit Hyd Qpeak  (cms)=   1.253

    PEAK FLOW       (cms)=   0.431 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)=  36.889
    TOTAL RAINFALL   (mm)= 112.166
    RUNOFF COEFFICIENT   =   0.329

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

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-------------------
| CALIB           |
| NASHYD   (0046) |   Area     (ha)=   2.21   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

    Unit Hyd Qpeak  (cms)=   0.367

    PEAK FLOW       (cms)=   0.293 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)=  56.704
    TOTAL RAINFALL   (mm)= 112.166
    RUNOFF COEFFICIENT   =   0.506

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

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-------------------
| CALIB           |
| STANDHYD (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min|   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       6.71         3.45
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      30.00        20.00
    Mannings n           =      0.013        0.250

    Max.Eff.Inten.(mm/hr)=     126.49        80.66
              over (min)       12.00        12.00
    Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
    Unit Hyd. Tpeak (min)=      12.00        12.00
    Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
    PEAK FLOW       (cms)=       2.36         0.71      3.063 (iii)
    TIME TO PEAK    (hrs)=      12.00        12.00        12.00
    RUNOFF VOLUME    (mm)=     111.17        61.26        94.20
    TOTAL RAINFALL   (mm)=     112.17       112.17       112.17
    RUNOFF COEFFICIENT   =       0.99         0.55         0.84

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min|   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
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                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.86         0.41
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      30.00        20.00
    Mannings n           =      0.013        0.250

    Max.Eff.Inten.(mm/hr)=     126.49        80.66
              over (min)       12.00        12.00
    Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
    Unit Hyd. Tpeak (min)=      12.00        12.00
    Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
    PEAK FLOW       (cms)=       0.30         0.08      0.387 (iii)
    TIME TO PEAK    (hrs)=      12.00        12.00        12.00
    RUNOFF VOLUME    (mm)=     111.17        61.26        95.20
    TOTAL RAINFALL   (mm)=     112.17       112.17       112.17
    RUNOFF COEFFICIENT   =       0.99         0.55         0.85

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD    (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=   1  |
| Total(cms)=  0.3 |          AREA     QPEAK     TPEAK     R.V.
-------------------           (ha)     (cms)     (hrs)     (mm)
    TOTAL HYD.(ID= 1):    1.27      0.39     12.00    95.20
    ================================================
    MAJOR SYS.(ID= 2):    0.05      0.07     12.00    95.20
    MINOR SYS.(ID= 3):    1.22      0.32     12.00    95.20

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD (0070) |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min|   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       1.38         1.12
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      30.00        20.00
    Mannings n           =      0.013        0.250

    Max.Eff.Inten.(mm/hr)=     126.49        80.66
              over (min)       12.00        12.00
    Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
    Unit Hyd. Tpeak (min)=      12.00        12.00
    Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
    PEAK FLOW       (cms)=       0.48         0.23      0.713 (iii)
    TIME TO PEAK    (hrs)=      12.00        12.00        12.00
    RUNOFF VOLUME    (mm)=     111.17        61.26        88.71
    TOTAL RAINFALL   (mm)=     112.17       112.17       112.17
    RUNOFF COEFFICIENT   =       0.99         0.55         0.79

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
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(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

DUHYD (0071)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.550		(ha)	(cms)	(hrs)	(mm)
#of Inlets= 1	TOTAL HYD.(ID= 1):	2.50	0.71	12.00	88.71
Total(cms)= 0.6	MAJOR SYS.(ID= 2):	0.13	0.16	12.00	88.71
	MINOR SYS.(ID= 3):	2.37	0.55	12.00	88.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0044):	3.28	0.431	12.00	36.89
	+ ID2= 2 (0045):	10.16	3.063	12.00	94.20
	ID = 3 (0048):	13.44	3.494	12.00	80.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	13.44	3.494	12.00	80.21
	+ ID2= 2 (0046):	2.21	0.293	12.00	56.70
	ID = 1 (0048):	15.65	3.787	12.00	76.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	15.65	3.787	12.00	76.89
	+ ID2= 2 (0069):	1.22	0.320	12.00	95.20
	ID = 3 (0048):	16.87	4.107	12.00	78.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	16.87	4.107	12.00	78.22
	+ ID2= 2 (0071):	2.37	0.550	12.00	88.71
	ID = 1 (0048):	19.24	4.657	12.00	79.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	19.24	4.657	12.00	79.51
	+ ID2= 2 (0072):	1.43	0.363	12.00	93.20
	ID = 3 (0048):	20.67	5.020	12.00	80.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.9630	0.3823
	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.671	5.020	12.00	80.46
OUTFLOW: ID= 1 (0049)	20.671	1.131	12.30	80.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.53
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.5367

ROUTE PIPE (0050)		
IN= 2---> OUT= 1	PIPE Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 467.00
	Slope	(m/m)= 0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.67	1.13	12.30	80.45	0.45	2.41
OUTFLOW: ID= 1 (0050)	20.67	1.13	12.30	80.45	0.45	2.42

CALIB					
NASHYD (0054)	Area	(ha)= 1.34	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.22			

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.184 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 56.402
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.503

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

CALIB					
NASHYD (0056)	Area	(ha)= 0.10	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.05			

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.002 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 5.028
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.045

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

CALIB			
NASHYD (0058)	Area (ha)= 2.51	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.27		

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.290 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 57.482
TOTAL RAINFALL (mm)= 112.166
RUNOFF COEFFICIENT = 0.512

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

CALIB		
STANDHYD (0057)	Area (ha)= 0.47	
ID= 1 DT=12.0 min	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.12 0.03 0.144 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.17 61.26 96.19
TOTAL RAINFALL	(mm)=	112.17 112.17 112.17
RUNOFF COEFFICIENT	=	0.99 0.55 0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0057):	0.47	0.144	12.00	96.19
	+ ID2= 2 (0058):	2.51	0.290	12.00	57.48
	ID = 3 (0073):	2.98	0.434	12.00	63.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)					
Inlet Cap.=0.181					
#of Inlets= 1					
Total(cms)= 0.2		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	TOTAL HYD.(ID= 1):	2.98	0.43	12.00	63.59
	MAJOR SYS.(ID= 2):	0.42	0.25	12.00	63.59
	MINOR SYS.(ID= 3):	2.56	0.18	12.00	63.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD (0053)	Area (ha)= 5.86	
ID= 1 DT=12.0 min	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.15 0.53 1.681 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.17 61.26 89.21
TOTAL RAINFALL	(mm)=	112.17 112.17 112.17
RUNOFF COEFFICIENT	=	0.99 0.55 0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0055)	Area (ha)= 2.71	
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.24 0.42 0.654 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.17 61.26 73.74
TOTAL RAINFALL	(mm)=	112.17 112.17 112.17
RUNOFF COEFFICIENT	=	0.99 0.55 0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0065)	Area (ha)= 2.71	
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.24 0.42 0.654 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.17 61.26 73.74
TOTAL RAINFALL	(mm)=	112.17 112.17 112.17
RUNOFF COEFFICIENT	=	0.99 0.55 0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0053):		5.86	1.681	12.00	89.21
+ ID2= 2 (0054):		1.34	0.184	12.00	56.40
ID = 3 (0051):		7.20	1.864	12.00	83.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 1 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		7.20	1.864	12.00	83.10
+ ID2= 2 (0055):		2.71	0.654	12.00	73.74
ID = 1 (0051):		9.91	2.519	12.00	80.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0051):		9.91	2.519	12.00	80.54
+ ID2= 2 (0056):		0.10	0.002	12.00	5.03
ID = 3 (0051):		10.01	2.520	12.00	79.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		10.01	2.520	12.00	79.79
+ ID2= 2 (0065):		2.71	0.654	12.00	73.74
ID = 1 (0051):		12.72	3.174	12.00	78.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0051):		12.72	3.174	12.00	78.50
+ ID2= 2 (0066):		2.56	0.181	12.00	63.59
ID = 3 (0051):		15.28	3.355	12.00	76.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 1 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		15.28	3.355	12.00	76.00
+ ID2= 2 (0069):		0.05	0.067	12.00	95.20
ID = 1 (0051):		15.33	3.422	12.00	76.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0050):		20.67	1.135	12.30	80.45
+ ID2= 2 (0051):		15.33	3.422	12.00	76.07
ID = 3 (0060):		36.00	4.315	12.00	78.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)					
IN= 2---> OUT= 1					
DT= 5.0 min		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
		0.0000	0.0000	0.5100	0.3577
		0.2970	0.1233	0.6800	0.7154
		0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	35.999	4.315	12.00	78.60
OUTFLOW: ID= 1 (0061)	35.999	0.750	14.30	78.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.39
TIME SHIFT OF PEAK FLOW (min)=138.00
MAXIMUM STORAGE USED (ha.m.)= 1.0156

FINISH

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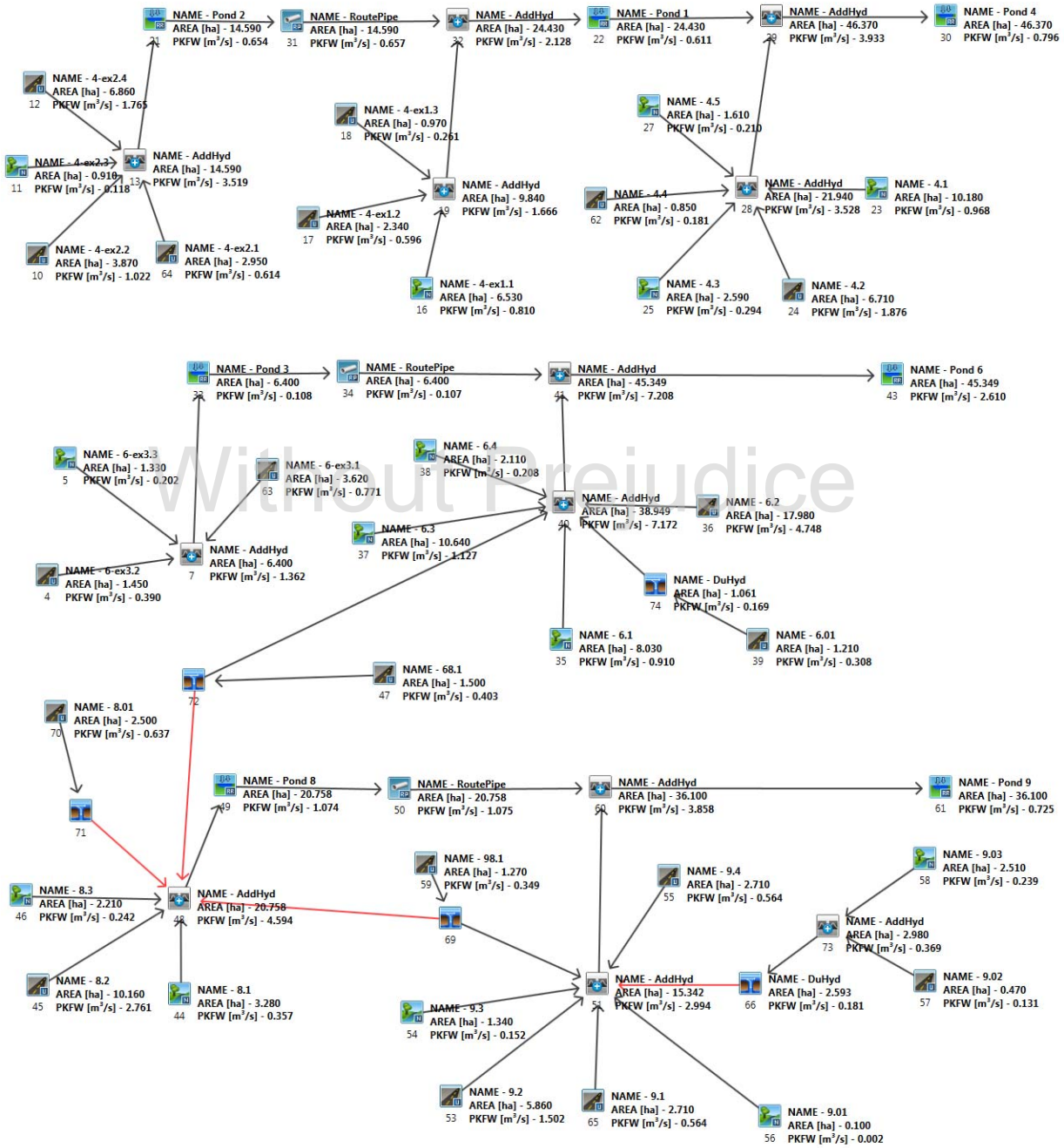
L09-301
Glenway golf course development, Newmarket, ON
12 Hour SCS Type II Storm Pre-Development Model Schematic
July 2013

VO2 Model Schematic



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

       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-
f59c2b644911\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-
f59c2b644911\Scenario.sum


DATE: 07/26/2013                          TIME: 02:12:27

USER:


COMMENTS: _____

------------------------------------------------------------------------------------------------
-----
  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************


-------------------
|    READ STORM   |     Filename: C:\Users\DMcBrayne\AppD
|                 |               ata\Local\Temp\
|                 |               f2b35c34-fbac-4525-847e-f59c2b644911\9550c8f9
| Ptotal= 42.00 mm|     Comments: 2-Year 12-Hour SCS II Design Storm
-------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.05	3.25	1.68	6.25	7.56	9.25	1.47
0.50	1.05	3.50	1.68	6.50	7.56	9.50	1.47
0.75	1.05	3.75	1.68	6.75	3.36	9.75	1.47
1.00	1.05	4.00	1.68	7.00	3.36	10.00	1.47
1.25	1.05	4.25	2.52	7.25	2.52	10.25	0.84
1.50	1.05	4.50	2.52	7.50	2.52	10.50	0.84
1.75	1.05	4.75	3.36	7.75	2.52	10.75	0.84
2.00	1.05	5.00	3.36	8.00	2.52	11.00	0.84
2.25	1.26	5.25	5.04	8.25	1.47	11.25	0.84
2.50	1.26	5.50	5.04	8.50	1.47	11.50	0.84
2.75	1.26	5.75	20.16	8.75	1.47	11.75	0.84
3.00	1.26	6.00	55.44	9.00	1.47	12.00	0.84

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

-------------------
| CALIB           |
| NASHYD   (0011) |   Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.05	3.200	1.68	6.200	7.56	9.20	1.47
0.400	1.05	3.400	1.68	6.400	7.56	9.40	1.47
0.600	1.05	3.600	1.68	6.600	5.46	9.60	1.47
0.800	1.05	3.800	1.68	6.800	3.36	9.80	1.47
1.000	1.05	4.000	1.68	7.000	3.36	10.00	1.47
1.200	1.05	4.200	2.52	7.200	2.52	10.20	0.84
1.400	1.05	4.400	2.52	7.400	2.52	10.40	0.84
1.600	1.05	4.600	2.94	7.600	2.52	10.60	0.84
1.800	1.05	4.800	3.36	7.800	2.52	10.80	0.84
2.000	1.05	5.000	3.36	8.000	2.52	11.00	0.84
2.200	1.26	5.200	5.04	8.200	1.47	11.20	0.84
2.400	1.26	5.400	5.04	8.400	1.47	11.40	0.84
2.600	1.26	5.600	12.60	8.600	1.47	11.60	0.84
2.800	1.26	5.800	28.98	8.800	1.47	11.80	0.84
3.000	1.26	6.000	55.44	9.000	1.47	12.00	0.84

```
     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.031 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=   9.926
     TOTAL RAINFALL   (mm)=  42.000
     RUNOFF COEFFICIENT   =   0.236

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

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0010)|   Area     (ha)=   3.87
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36          1.51
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      55.44         19.90
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.28 (ii)    10.16 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.36          0.07       0.429 (iii)
     TIME TO PEAK    (hrs)=       6.00          6.00       6.00
     RUNOFF VOLUME    (mm)=      41.00         12.64      29.94
     TOTAL RAINFALL   (mm)=      42.00         42.00      42.00
     RUNOFF COEFFICIENT   =       0.98          0.30       0.71

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0012)|   Area     (ha)=   6.86
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.18          2.68
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=     213.85         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      55.44         19.90
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       4.15 (ii)    13.03 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.13          0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.63          0.09       0.690 (iii)
     TIME TO PEAK    (hrs)=       6.00          6.20       6.00
     RUNOFF VOLUME    (mm)=      41.00         12.64      29.94
     TOTAL RAINFALL   (mm)=      42.00         42.00      42.00
     RUNOFF COEFFICIENT   =       0.98          0.30       0.71

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.
```

CALIB STANDHYD (0064) ID= 1 DT=12.0 min	Area (ha)= 2.95 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.74	2.21	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.11	0.10	0.209 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	19.73
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.47

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.429	6.00	29.94
+ ID2= 2 (0011):	0.91	0.031	6.00	9.93
ID = 3 (0013):	4.78	0.460	6.00	26.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	0.460	6.00	26.13
+ ID2= 2 (0012):	6.86	0.690	6.00	29.94
ID = 1 (0013):	11.64	1.150	6.00	28.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	1.150	6.00	28.37
+ ID2= 2 (0064):	2.95	0.209	6.00	19.73
ID = 3 (0013):	14.59	1.359	6.00	26.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4563
	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	1.359	6.00	26.63
OUTFLOW: ID= 1 (0021)	14.590	0.306	6.30	26.61

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.55
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.1868

ROUTE PIPE (0031) IN= 2---> OUT= 1 DT= 5.0 min	PIPE Number = 1.00 Diameter (mm)=1650.00 Length (m)= 500.00 Slope (m/m)= 0.005 Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.31	6.30	26.61	0.24	1.52
OUTFLOW: ID= 1 (0031)	14.59	0.31	6.40	26.61	0.24	1.52

CALIB NASHYD (0016) ID= 1 DT=12.0 min	Area (ha)= 6.53 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.212 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.208
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.243

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

CALIB STANDHYD (0018) ID= 1 DT=12.0 min	Area (ha)= 0.97 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.62	0.35	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.10	0.02	0.111 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	30.79
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0017) ID= 1 DT=12.0 min | Area (ha)= 2.34 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	55.44	19.90
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10

				TOTALS
PEAK FLOW	(cms)=	0.20	0.05	0.244 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	28.24
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.212	6.00	10.21
+ ID2= 2 (0017):	2.34	0.244	6.00	28.24
ID = 3 (0019):	8.87	0.456	6.00	14.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	0.456	6.00	14.96
+ ID2= 2 (0018):	0.97	0.111	6.00	30.79
ID = 1 (0019):	9.84	0.566	6.00	16.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	0.566	6.00	16.52
+ ID2= 2 (0031):	14.59	0.307	6.40	26.61
ID = 3 (0032):	24.43	0.706	6.00	22.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	0.706	6.00	22.55
OUTFLOW: ID= 1 (0022)	24.430	0.298	7.00	22.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 42.21
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1406

CALIB NASHYD (0023) ID= 1 DT=12.0 min | Area (ha)= 10.18 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW	(cms)=	0.247 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	10.660
TOTAL RAINFALL	(mm)=	42.000
RUNOFF COEFFICIENT	=	0.254

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

CALIB NASHYD (0025) ID= 1 DT=12.0 min | Area (ha)= 2.59 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW	(cms)=	0.076 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	10.460
TOTAL RAINFALL	(mm)=	42.000
RUNOFF COEFFICIENT	=	0.249

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

CALIB NASHYD (0027) ID= 1 DT=12.0 min | Area (ha)= 1.61 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW	(cms)=	0.056 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	8.776
TOTAL RAINFALL	(mm)=	42.000
RUNOFF COEFFICIENT	=	0.209

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

CALIB STANDHYD (0024) ID= 1 DT=12.0 min | Area (ha)= 6.71 Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	55.44	19.90
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10

				TOTALS
PEAK FLOW	(cms)=	0.73	0.08	0.818 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	32.78
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min	Area (ha)= 0.85 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.24	0.61	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.03	0.063 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	20.57
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.49

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.247	6.00	10.66
+ ID2= 2 (0024):	6.71	0.818	6.00	32.78
ID = 3 (0028):	16.89	1.064	6.00	19.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	1.064	6.00	19.45
+ ID2= 2 (0025):	2.59	0.076	6.00	10.46
ID = 1 (0028):	19.48	1.140	6.00	18.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	1.140	6.00	18.25
+ ID2= 2 (0027):	1.61	0.056	6.00	8.78
ID = 3 (0028):	21.09	1.196	6.00	17.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	1.196	6.00	17.53
+ ID2= 2 (0062):	0.85	0.063	6.00	20.57
ID = 1 (0028):	21.94	1.259	6.00	17.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.298	7.00	22.54
+ ID2= 2 (0028):	21.94	1.259	6.00	17.65
ID = 3 (0029):	46.37	1.361	6.00	20.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	1.361	6.00	20.25
OUTFLOW: ID= 1 (0030)	46.370	0.306	8.20	20.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.50
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.3105

CALIB NASHYD (0005) ID= 1 DT= 5.0 min | Area (ha)= 1.33 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.05	3.083	1.68	6.083	7.56	9.08	1.47
0.167	1.05	3.167	1.68	6.167	7.56	9.17	1.47
0.250	1.05	3.250	1.68	6.250	7.56	9.25	1.47
0.333	1.05	3.333	1.68	6.333	7.56	9.33	1.47
0.417	1.05	3.417	1.68	6.417	7.56	9.42	1.47
0.500	1.05	3.500	1.68	6.500	7.56	9.50	1.47
0.583	1.05	3.583	1.68	6.583	3.36	9.58	1.47
0.667	1.05	3.667	1.68	6.667	3.36	9.67	1.47
0.750	1.05	3.750	1.68	6.750	3.36	9.75	1.47
0.833	1.05	3.833	1.68	6.833	3.36	9.83	1.47
0.917	1.05	3.917	1.68	6.917	3.36	9.92	1.47
1.000	1.05	4.000	1.68	7.000	3.36	10.00	1.47
1.083	1.05	4.083	2.52	7.083	2.52	10.08	0.84
1.167	1.05	4.167	2.52	7.167	2.52	10.17	0.84
1.250	1.05	4.250	2.52	7.250	2.52	10.25	0.84
1.333	1.05	4.333	2.52	7.333	2.52	10.33	0.84
1.417	1.05	4.417	2.52	7.417	2.52	10.42	0.84
1.500	1.05	4.500	2.52	7.500	2.52	10.50	0.84
1.583	1.05	4.583	3.36	7.583	2.52	10.58	0.84
1.667	1.05	4.667	3.36	7.667	2.52	10.67	0.84
1.750	1.05	4.750	3.36	7.750	2.52	10.75	0.84
1.833	1.05	4.833	3.36	7.833	2.52	10.83	0.84
1.917	1.05	4.917	3.36	7.917	2.52	10.92	0.84
2.000	1.05	5.000	3.36	8.000	2.52	11.00	0.84
2.083	1.26	5.083	5.04	8.083	1.47	11.08	0.84
2.167	1.26	5.167	5.04	8.167	1.47	11.17	0.84
2.250	1.26	5.250	5.04	8.250	1.47	11.25	0.84
2.333	1.26	5.333	5.04	8.333	1.47	11.33	0.84
2.417	1.26	5.417	5.04	8.417	1.47	11.42	0.84
2.500	1.26	5.500	5.04	8.500	1.47	11.50	0.84
2.583	1.26	5.583	20.16	8.583	1.47	11.58	0.84
2.667	1.26	5.667	20.16	8.667	1.47	11.67	0.84
2.750	1.26	5.750	20.16	8.750	1.47	11.75	0.84

2.833	1.26	5.833	55.44	8.833	1.47	11.83	0.84
2.917	1.26	5.917	55.44	8.917	1.47	11.92	0.84
3.000	1.26	6.000	55.44	9.000	1.47	12.00	0.84

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.053 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.737
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.256

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

CALIB
STANDHYD (0004)
ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.05	3.200	1.68	6.200	7.56	9.20	1.47
0.400	1.05	3.400	1.68	6.400	7.56	9.40	1.47
0.600	1.05	3.600	1.68	6.600	5.46	9.60	1.47
0.800	1.05	3.800	1.68	6.800	3.36	9.80	1.47
1.000	1.05	4.000	1.68	7.000	3.36	10.00	1.47
1.200	1.05	4.200	2.52	7.200	2.52	10.20	0.84
1.400	1.05	4.400	2.52	7.400	2.52	10.40	0.84
1.600	1.05	4.600	2.94	7.600	2.52	10.60	0.84
1.800	1.05	4.800	3.36	7.800	2.52	10.80	0.84
2.000	1.05	5.000	3.36	8.000	2.52	11.00	0.84
2.200	1.26	5.200	5.04	8.200	1.47	11.20	0.84
2.400	1.26	5.400	5.04	8.400	1.47	11.40	0.84
2.600	1.26	5.600	12.60	8.600	1.47	11.60	0.84
2.800	1.26	5.800	28.98	8.800	1.47	11.80	0.84
3.000	1.26	6.000	55.44	9.000	1.47	12.00	0.84

				TOTALS
Max.Eff.Inten.(mm/hr)=		55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
PEAK FLOW	(cms)=	0.14	0.02	0.165 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	30.79
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0063)
ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=		55.44	19.90
over (min)		12.00	12.00
Storage Coeff. (min)=		1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10

				TOTALS
PEAK FLOW	(cms)=	0.16	0.11	0.268 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	20.58
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.49

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.165	6.00	30.79
+ ID2= 2 (0005):	1.33	0.053	6.00	10.74
ID = 3 (0007):	2.78	0.219	6.00	21.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.219	6.00	21.30
+ ID2= 2 (0063):	3.62	0.268	6.00	20.58
ID = 1 (0007):	6.40	0.487	6.00	20.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.487	6.00	20.97
OUTFLOW: ID= 1 (0033)	6.400	0.036	7.08	20.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.43
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0847

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15

1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.04	7.08	20.87	0.09	0.81
OUTFLOW: ID= 1 (0034)	6.40	0.04	7.50	20.87	0.09	0.80

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.236 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.460
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.249

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.290 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.562
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.251

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.053 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.633
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.253

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	10.97	7.01
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	55.44	19.90
over (min)	12.00	12.00
Storage Coeff. (min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	1.69	0.30	1.991 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	41.00	12.64	29.94
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.30	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.67	0.54
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	55.44	19.90
over (min)	12.00	12.00
Storage Coeff. (min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	0.10	0.02	0.126 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	41.00	12.64	28.23
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.30	0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.13	6.00	28.23
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.21	0.13	6.00	28.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0047)
ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.96	0.54
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	55.44	19.90
over (min)	12.00	12.00
Storage Coeff. (min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	0.15	0.02	0.171 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	41.00	12.64	30.79
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.30	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)					
Inlet Cap.=0.363					
#of Inlets= 1					
Total(cms)= 0.4		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.50	0.17	6.00	30.79
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		1.50	0.17	6.00	30.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0035):	8.03	0.236	6.00	10.46
	+ ID2= 2 (0036):	17.98	1.991	6.00	29.94
	ID = 3 (0040):	26.01	2.227	6.00	23.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0040):	26.01	2.227	6.00	23.93
	+ ID2= 2 (0037):	10.64	0.290	6.00	10.56
	ID = 1 (0040):	36.65	2.517	6.00	20.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	36.65	2.517	6.00	20.05
	+ ID2= 2 (0038):	2.11	0.053	6.00	10.63
	ID = 3 (0040):	38.76	2.571	6.00	19.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
*** W A R N I N G : HYDROGRAPH 0072 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
	ID1= 3 (0040):	38.76	2.571	6.00	19.53
	+ ID2= 2 (0072):	0.00	0.000	0.00	0.00
	ID = 1 (0040):	38.76	2.571	6.00	19.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
*** W A R N I N G : HYDROGRAPH 0074 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001					
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001					
	ID1= 1 (0040):	38.76	2.571	6.00	19.53
	+ ID2= 2 (0074):	0.00	0.000	0.00	0.00
	ID = 3 (0040):	38.76	2.571	6.00	19.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0034):	6.40	0.036	7.50	20.87
	+ ID2= 2 (0040):	38.76	2.571	6.00	19.53
	ID = 3 (0041):	45.16	2.584	6.00	19.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043)				
IN= 2---> OUT= 1				
DT= 5.0 min		OUTFLOW	STORAGE	
		(cms)	(ha.m.)	
		0.0000	0.0000	
		1.2740	0.5550	
		2.2650	0.7154	

	OUTFLOW	STORAGE
	(cms)	(ha.m.)
	3.1150	0.9004
	3.6250	1.1600
	3.9640	1.3570

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0041)	45.160	2.584	6.00	19.82
OUTFLOW: ID= 1 (0043)	45.160	0.697	6.33	19.82

PEAK FLOW REDUCTION [Qout/Qin](%)= 26.97
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.3036

CALIB					
NASHYD (0044)	Area	(ha)=	3.28	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.10		

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.096 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 6.841
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.163

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

CALIB					
NASHYD (0046)	Area	(ha)=	2.21	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.23		

Unit Hyd Qpeak (cms)= 0.367

PEAK FLOW (cms)= 0.063 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.516
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.250

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

CALIB					
STANDHYD (0045)	Area	(ha)=	10.16		
ID= 1 DT=12.0 min	Total Imp	(%)=	66.00	Dir. Conn.(%)=	66.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	6.71	3.45
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	55.44	19.90
over (min)	12.00	12.00
Storage Coeff. (min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00

Unit Hyd. peak	(cms)=	0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	1.03	0.15	1.182 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	31.36
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0059) | Area (ha)= 1.27
ID= 1 DT=12.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		55.44	19.90
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	0.13	0.02 0.151 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	41.00	12.64 31.92
TOTAL RAINFALL	(mm)=	42.00	42.00 42.00
RUNOFF COEFFICIENT	=	0.98	0.30 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)
Inlet Cap.=0.320
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.15	6.00	31.92
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.27	0.15	6.00	31.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0070) | Area (ha)= 2.50
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		55.44	19.90
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	0.21	0.05 0.260 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	41.00	12.64 28.24
TOTAL RAINFALL	(mm)=	42.00	42.00 42.00
RUNOFF COEFFICIENT	=	0.98	0.30 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)
Inlet Cap.=0.550
#of Inlets= 1
Total(cms)= 0.6

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.26	6.00	28.24
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.26	6.00	28.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.096	6.00	6.84
+ ID2= 2 (0045):	10.16	1.182	6.00	31.36
ID = 3 (0048):	13.44	1.278	6.00	25.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	1.278	6.00	25.37
+ ID2= 2 (0046):	2.21	0.063	6.00	10.52
ID = 1 (0048):	15.65	1.340	6.00	23.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	1.340	6.00	23.28
+ ID2= 2 (0069):	1.27	0.151	6.00	31.92
ID = 3 (0048):	16.92	1.491	6.00	23.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	1.491	6.00	23.93
+ ID2= 2 (0071):	2.50	0.260	6.00	28.24
ID = 1 (0048):	19.42	1.751	6.00	24.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.42	1.751	6.00	24.48
+ ID2= 2 (0072):	1.50	0.171	6.00	30.79
ID = 3 (0048):	20.92	1.922	6.00	24.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| RESERVOIR (0049) | IN= 2---> OUT= 1 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.9630	0.3823
0.5430	0.1233	1.3030	0.6907
0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	1.922	6.00	24.93
OUTFLOW: ID= 1 (0049)	20.920	0.650	6.20	24.93

PEAK FLOW REDUCTION [Qout/Qin](%)= 33.83
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.1817

| ROUTE PIPE (0050) | IN= 2---> OUT= 1 | DT= 5.0 min |

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.65	6.20	24.93	0.34	2.05
OUTFLOW: ID= 1 (0050)	20.92	0.65	6.20	24.93	0.34	2.05

| CALIB | NASHYD (0054) | ID= 1 DT=12.0 min |

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.039 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.460
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.249

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

| CALIB | NASHYD (0056) | ID= 1 DT=12.0 min |

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.000 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 0.933
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.022

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

| CALIB | NASHYD (0058) | ID= 1 DT=12.0 min |

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.061 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 10.660
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.254

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

| CALIB | STANDHYD (0057) | ID= 1 DT=12.0 min |

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.33	0.14
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	55.44	19.90
over (min)	12.00	12.00
Storage Coeff. (min)=	1.28 (ii)	10.16 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

		TOTALS
PEAK FLOW (cms)=	0.05	0.01	0.057 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	41.00	12.64	32.48
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.30	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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 AN.

| ADD HYD (0073) | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.057	6.00	32.48
+ ID2= 2 (0058):	2.51	0.061	6.00	10.66
ID = 3 (0073):	2.98	0.118	6.00	14.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| DUHYD (0066) | Inlet Cap.=0.181 | #of Inlets= 1 | Total(cms)= 0.2 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.12	6.00	14.10
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.12	6.00	14.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0053)	Area (ha)= 5.86		
ID= 1 DT=12.0 min	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.51	0.11	0.616 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	28.52
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0055)	Area (ha)= 2.71		
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.10	0.09	0.192 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	19.73
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.47

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0065)	Area (ha)= 2.71		
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	55.44	19.90	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.28 (ii)	10.16 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.10	0.09	0.192 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	41.00	12.64	19.73
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.30	0.47

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0053):	5.86	0.616	6.00	28.52	
+ ID2= 2 (0054):	1.34	0.039	6.00	10.46	
ID = 3 (0051):	7.20	0.656	6.00	25.16	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0051):	7.20	0.656	6.00	25.16	
+ ID2= 2 (0055):	2.71	0.192	6.00	19.73	
ID = 1 (0051):	9.91	0.848	6.00	23.67	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0051):	9.91	0.848	6.00	23.67	
+ ID2= 2 (0056):	0.10	0.000	6.00	0.93	
ID = 3 (0051):	10.01	0.848	6.00	23.45	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0051):	10.01	0.848	6.00	23.45	
+ ID2= 2 (0065):	2.71	0.192	6.00	19.73	
ID = 1 (0051):	12.72	1.040	6.00	22.66	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0051):	12.72	1.040	6.00	22.66	
+ ID2= 2 (0066):	2.98	0.118	6.00	14.10	
ID = 3 (0051):	15.70	1.158	6.00	21.03	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
*** W A R N I N G : HYDROGRAPH 0069 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
ID1= 3 (0051):	15.70	1.158	6.00	21.03	

```
          + ID2= 2 (0069):     0.00   0.000     0.00     0.00
            ================================================
            ID = 1 (0051):    15.70   1.158     6.00    21.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0060) |
|   1 +  2 =  3    |
--------------------          AREA    QPEAK    TPEAK     R.V.
                              (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0050):    20.92   0.653     6.20    24.93
        + ID2= 2 (0051):    15.70   1.158     6.00    21.03
          ================================================
          ID = 3 (0060):    36.62   1.657     6.00    23.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                           0.0000     0.0000    |   0.5100     0.3577
                           0.2970     0.1233    |   0.6800     0.7154
                           0.4250     0.2220    |   0.7930     1.1964

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0060)     36.620     1.657      6.00      23.26
     OUTFLOW: ID= 1 (0061)     36.620     0.476      7.10      23.26

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 28.72
                TIME SHIFT OF PEAK FLOW         (min)= 66.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.3034

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  ****************************
  ** SIMULATION NUMBER:   2 **
  ****************************


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|    READ STORM    |     Filename: C:\Users\DMcBrayne\AppD
|                  |               ata\Local\Temp\
|                  |               f2b35c34-fbac-4525-847e-f59c2b644911\60c8ba75
| Ptotal= 54.40 mm |     Comments: 5-Year 12-Hour SCS II Design Storm
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.36 |  3.25    2.18 |   6.25    9.79 |  9.25    1.90
                0.50    1.36 |  3.50    2.18 |   6.50    9.79 |  9.50    1.90
                0.75    1.36 |  3.75    2.18 |   6.75    4.35 |  9.75    1.90
                1.00    1.36 |  4.00    2.18 |   7.00    4.35 | 10.00    1.90
                1.25    1.36 |  4.25    3.26 |   7.25    3.26 | 10.25    1.09
                1.50    1.36 |  4.50    3.26 |   7.50    3.26 | 10.50    1.09
                1.75    1.36 |  4.75    4.35 |   7.75    3.26 | 10.75    1.09
                2.00    1.36 |  5.00    4.35 |   8.00    3.26 | 11.00    1.09
                2.25    1.63 |  5.25    6.53 |   8.25    1.90 | 11.25    1.09
                2.50    1.63 |  5.50    6.53 |   8.50    1.90 | 11.50    1.09
                2.75    1.63 |  5.75   26.11 |   8.75    1.90 | 11.75    1.09
                3.00    1.63 |  6.00   71.81 |   9.00    1.90 | 12.00    1.09

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| CALIB            |
| NASHYD    (0011) |   Area     (ha)=   0.91   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.200    1.36 | 3.200    2.18 |  6.200    9.79 |  9.20    1.90
               0.400    1.36 | 3.400    2.18 |  6.400    9.79 |  9.40    1.90
               0.600    1.36 | 3.600    2.18 |  6.600    7.07 |  9.60    1.90
               0.800    1.36 | 3.800    2.18 |  6.800    4.35 |  9.80    1.90
               1.000    1.36 | 4.000    2.18 |  7.000    4.35 | 10.00    1.90
               1.200    1.36 | 4.200    3.26 |  7.200    3.26 | 10.20    1.09
               1.400    1.36 | 4.400    3.26 |  7.400    3.26 | 10.40    1.09
               1.600    1.36 | 4.600    3.81 |  7.600    3.26 | 10.60    1.09
               1.800    1.36 | 4.800    4.35 |  7.800    3.26 | 10.80    1.09
               2.000    1.36 | 5.000    4.35 |  8.000    3.26 | 11.00    1.09
               2.200    1.63 | 5.200    6.53 |  8.200    1.90 | 11.20    1.09
               2.400    1.63 | 5.400    6.53 |  8.400    1.90 | 11.40    1.09
               2.600    1.63 | 5.600   16.32 |  8.600    1.90 | 11.60    1.09
               2.800    1.63 | 5.800   37.54 |  8.800    1.90 | 11.80    1.09
               3.000    1.63 | 6.000   71.81 |  9.000    1.90 | 12.00    1.09

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.051 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  16.111
     TOTAL RAINFALL   (mm)=  54.400
     RUNOFF COEFFICIENT   =   0.296

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

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| CALIB            |
| STANDHYD  (0010) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        2.36          1.51
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       71.81         31.03
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.15 (ii)     8.59 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.47          0.11      0.579 (iii)
     TIME TO PEAK    (hrs)=        6.00          6.00       6.00
     RUNOFF VOLUME    (mm)=       53.40         19.69      40.25
     TOTAL RAINFALL   (mm)=       54.40         54.40      54.40
     RUNOFF COEFFICIENT   =        0.98          0.36       0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0012) |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        4.18          2.68
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=      213.85         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       71.81         31.03
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        3.74 (ii)    11.17 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.82          0.17      0.992 (iii)
     TIME TO PEAK    (hrs)=        6.00          6.00       6.00
     RUNOFF VOLUME    (mm)=       53.40         19.69      40.25
     TOTAL RAINFALL   (mm)=       54.40         54.40      54.40
     RUNOFF COEFFICIENT   =        0.98          0.36       0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB             |
| STANDHYD  (0064)  |   Area    (ha)=   2.95
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.74         2.21
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     71.81        31.03
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.15 (ii)    8.59 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.15         0.16          0.305 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=     53.40        19.69         28.11
     TOTAL RAINFALL   (mm)=     54.40        54.40         54.40
     RUNOFF COEFFICIENT   =      0.98         0.36          0.52

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
-------------------
| ADD HYD   (0013)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0010):     3.87   0.579     6.00    40.25
       + ID2= 2 (0011):     0.91   0.051     6.00    16.11
         ================================================
         ID = 3 (0013):     4.78   0.630     6.00    35.66

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

```
-------------------
| ADD HYD   (0013)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0013):     4.78   0.630     6.00    35.66
       + ID2= 2 (0012):     6.86   0.992     6.00    40.25
         ================================================
         ID = 1 (0013):    11.64   1.622     6.00    38.36

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

```
-------------------
| ADD HYD   (0013)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0013):    11.64   1.622     6.00    38.36
       + ID2= 2 (0064):     2.95   0.305     6.00    28.11
         ================================================
         ID = 3 (0013):    14.59   1.927     6.00    36.29

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

```
-------------------
| RESERVOIR (0021)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.6510     0.4563
                         0.1220     0.1110     |   0.8770     0.7650
                         0.3620     0.2096     |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
    INFLOW : ID= 2 (0013)     14.590     1.927      6.00      36.29
    OUTFLOW: ID= 1 (0021)     14.590     0.414      6.20      36.28

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 21.49
                    TIME SHIFT OF PEAK FLOW         (min)= 12.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.2545
```

```
-------------------
| ROUTE PIPE (0031) |     PIPE Number      =   1.00
| IN= 2---> OUT= 1  |     Diameter    (mm)=1650.00
| DT=  5.0 min      |     Length       (m)= 500.00
-------------------       Slope      (m/m)=  0.005
                          Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)        min
        0.09    .216E+02         0.0          0.80       10.40
        0.17    .600E+02         0.1          1.25        6.67
        0.26    .108E+03         0.3          1.61        5.18
        0.35    .164E+03         0.6          1.91        4.36
        0.43    .225E+03         1.0          2.18        3.83
        0.52    .290E+03         1.4          2.41        3.46
        0.61    .358E+03         1.9          2.61        3.19
        0.69    .428E+03         2.4          2.79        2.99
        0.78    .499E+03         2.9          2.95        2.83
        0.87    .570E+03         3.5          3.08        2.70
        0.96    .642E+03         4.1          3.20        2.61
        1.04    .712E+03         4.7          3.29        2.53
        1.13    .780E+03         5.2          3.36        2.48
        1.22    .844E+03         5.8          3.41        2.44
        1.30    .905E+03         6.2          3.44        2.43
        1.39    .961E+03         6.6          3.43        2.43
        1.48    .101E+04         6.9          3.40        2.45
        1.56    .105E+04         6.9          3.31        2.52
        1.65    .107E+04         6.5          3.02        2.76
                                          <---- hydrograph ---->   <-pipe / channel->
                              AREA     QPEAK     TPEAK    R.V.    MAX DEPTH   MAX VEL
                               (ha)     (cms)     (hrs)    (mm)       (m)       (m/s)
    INFLOW : ID= 2 (0021)     14.59      0.41      6.20   36.28      0.28      1.67
    OUTFLOW: ID= 1 (0031)     14.59      0.41      6.30   36.27      0.28      1.67
```

```
-------------------
| CALIB             |
| NASHYD    (0016)  |   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.348 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)= 16.569
     TOTAL RAINFALL   (mm)= 54.400
     RUNOFF COEFFICIENT   =  0.305

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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-------------------
| CALIB             |
| STANDHYD  (0018)  |   Area    (ha)=   0.97
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.62         0.35
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     71.81        31.03
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.15 (ii)    8.59 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.12         0.02          0.149 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=     53.40        19.69         41.26
     TOTAL RAINFALL   (mm)=     54.40        54.40         54.40
     RUNOFF COEFFICIENT   =      0.98         0.36          0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
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          CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB                |
| STANDHYD  (0017)     |   Area    (ha)=   2.34
|ID= 1 DT=12.0 min     |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.29         1.05
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     71.81        31.03
           over (min)           12.00        12.00
     Storage Coeff.  (min)=      1.15 (ii)    8.59 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.26         0.08          0.332 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     53.40        19.69          38.23
     TOTAL RAINFALL   (mm)=     54.40        54.40          54.40
     RUNOFF COEFFICIENT   =      0.98         0.36           0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0019)   |
|   1 +  2 =  3      |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0016):     6.53   0.348     6.00     16.57
        + ID2= 2 (0017):     2.34   0.332     6.00     38.23
          ================================================
          ID = 3 (0019):     8.87   0.680     6.00     22.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0019)   |
|   3 +  2 =  1      |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0019):     8.87   0.680     6.00     22.28
        + ID2= 2 (0018):     0.97   0.149     6.00     41.26
          ================================================
          ID = 1 (0019):     9.84   0.829     6.00     24.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0032)   |
|   1 +  2 =  3      |          AREA    QPEAK    TPEAK     R.V.
-------------------             (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):     9.84   0.829     6.00     24.15
        + ID2= 2 (0031):    14.59   0.414     6.30     36.27
          ================================================
          ID = 3 (0032):    24.43   1.076     6.00     31.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0022)   |
| IN= 2---> OUT= 1   |
| DT=  5.0 min       |     OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |     (cms)     (ha.m.)
                         0.0000     0.0000    |    0.6510      0.4564
                         0.1220     0.0863    |    0.8770      0.7894
                         0.3620     0.1603    |    0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0032)      24.430     1.076      6.00      31.39
     OUTFLOW: ID= 1 (0022)      24.430     0.401      7.20      31.39

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 37.25
               TIME SHIFT OF PEAK FLOW          (min)= 72.00
               MAXIMUM  STORAGE   USED       (ha.m.)=  0.2001

--------------------------------------------------------------------------------
-------------------
| CALIB                |
| NASHYD    (0023)     |   Area     (ha)=  10.18   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min     |   Ia        (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------      U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   1.440

     PEAK FLOW       (cms)=   0.410 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  17.303
     TOTAL RAINFALL   (mm)=  54.400
     RUNOFF COEFFICIENT   =   0.318

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

--------------------------------------------------------------------------------
-------------------
| CALIB                |
| NASHYD    (0025)     |   Area     (ha)=   2.59   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min     |   Ia        (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------      U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.126 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  16.979
     TOTAL RAINFALL   (mm)=  54.400
     RUNOFF COEFFICIENT   =   0.312

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

--------------------------------------------------------------------------------
-------------------
| CALIB                |
| NASHYD    (0027)     |   Area     (ha)=   1.61   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min     |   Ia        (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------      U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.091 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  14.244
     TOTAL RAINFALL   (mm)=  54.400
     RUNOFF COEFFICIENT   =   0.262

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

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-------------------
| CALIB                |
| STANDHYD  (0024)     |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min     |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.76         1.95
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     71.81        31.03
           over (min)           12.00        12.00
     Storage Coeff.  (min)=      1.15 (ii)    8.59 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.95         0.14          1.089 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     53.40        19.69          43.62
     TOTAL RAINFALL   (mm)=     54.40        54.40          54.40
     RUNOFF COEFFICIENT   =      0.98         0.36           0.80
```

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min	Area (ha)= 0.85 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.24	0.61	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.81	31.03	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
			TOTALS
PEAK FLOW (cms)=	0.05	0.04	0.091 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	53.40	19.69	29.12
TOTAL RAINFALL (mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT =	0.98	0.36	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.410	6.00	17.30
+ ID2= 2 (0024):	6.71	1.089	6.00	43.62
ID = 3 (0028):	16.89	1.499	6.00	27.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	1.499	6.00	27.76
+ ID2= 2 (0025):	2.59	0.126	6.00	16.98
ID = 1 (0028):	19.48	1.625	6.00	26.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	1.625	6.00	26.33
+ ID2= 2 (0027):	1.61	0.091	6.00	14.24
ID = 3 (0028):	21.09	1.716	6.00	25.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	1.716	6.00	25.40
+ ID2= 2 (0062):	0.85	0.091	6.00	29.12
ID = 1 (0028):	21.94	1.807	6.00	25.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.401	7.20	31.39
+ ID2= 2 (0028):	21.94	1.807	6.00	25.55
ID = 3 (0029):	46.37	1.987	6.00	28.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.3030	1.3940
	0.4380	0.4440	1.5000	1.8008
	0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	1.987	6.00	28.66
OUTFLOW: ID= 1 (0030)	46.370	0.447	8.40	28.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.49
TIME SHIFT OF PEAK FLOW (min)=144.00
MAXIMUM STORAGE USED (ha.m.)= 0.4529

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 1.33 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.36	3.083	2.18	6.083	9.79	9.08	1.90
0.167	1.36	3.167	2.18	6.167	9.79	9.17	1.90
0.250	1.36	3.250	2.18	6.250	9.79	9.25	1.90
0.333	1.36	3.333	2.18	6.333	9.79	9.33	1.90
0.417	1.36	3.417	2.18	6.417	9.79	9.42	1.90
0.500	1.36	3.500	2.18	6.500	9.79	9.50	1.90
0.583	1.36	3.583	2.18	6.583	4.35	9.58	1.90
0.667	1.36	3.667	2.18	6.667	4.35	9.67	1.90
0.750	1.36	3.750	2.18	6.750	4.35	9.75	1.90
0.833	1.36	3.833	2.18	6.833	4.35	9.83	1.90
0.917	1.36	3.917	2.18	6.917	4.35	9.92	1.90
1.000	1.36	4.000	2.18	7.000	4.35	10.00	1.90
1.083	1.36	4.083	3.26	7.083	3.26	10.08	1.09
1.167	1.36	4.167	3.26	7.167	3.26	10.17	1.09
1.250	1.36	4.250	3.26	7.250	3.26	10.25	1.09
1.333	1.36	4.333	3.26	7.333	3.26	10.33	1.09
1.417	1.36	4.417	3.26	7.417	3.26	10.42	1.09
1.500	1.36	4.500	3.26	7.500	3.26	10.50	1.09
1.583	1.36	4.583	4.35	7.583	3.26	10.58	1.09
1.667	1.36	4.667	4.35	7.667	3.26	10.67	1.09
1.750	1.36	4.750	4.35	7.750	3.26	10.75	1.09
1.833	1.36	4.833	4.35	7.833	3.26	10.83	1.09
1.917	1.36	4.917	4.35	7.917	3.26	10.92	1.09
2.000	1.36	5.000	4.35	8.000	3.26	11.00	1.09
2.083	1.63	5.083	6.53	8.083	1.90	11.08	1.09
2.167	1.63	5.167	6.53	8.167	1.90	11.17	1.09
2.250	1.63	5.250	6.53	8.250	1.90	11.25	1.09
2.333	1.63	5.333	6.53	8.333	1.90	11.33	1.09
2.417	1.63	5.417	6.53	8.417	1.90	11.42	1.09
2.500	1.63	5.500	6.53	8.500	1.90	11.50	1.09
2.583	1.63	5.583	26.11	8.583	1.90	11.58	1.09
2.667	1.63	5.667	26.11	8.667	1.90	11.67	1.09
2.750	1.63	5.750	26.11	8.750	1.90	11.75	1.09
2.833	1.63	5.833	71.81	8.833	1.90	11.83	1.09

2.917	1.63	5.917	71.81	8.917	1.90	11.92	1.09
3.000	1.63	6.000	71.81	9.000	1.90	12.00	1.09

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.087 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 17.427
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.320

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

CALIB STANDHYD (0004) ID= 1 DT=12.0 min | Area (ha)= 1.45 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.36	3.200	2.18	6.200	9.79	9.20	1.90
0.400	1.36	3.400	2.18	6.400	9.79	9.40	1.90
0.600	1.36	3.600	2.18	6.600	7.07	9.60	1.90
0.800	1.36	3.800	2.18	6.800	4.35	9.80	1.90
1.000	1.36	4.000	2.18	7.000	4.35	10.00	1.90
1.200	1.36	4.200	3.26	7.200	3.26	10.20	1.09
1.400	1.36	4.400	3.26	7.400	3.26	10.40	1.09
1.600	1.36	4.600	3.81	7.600	3.26	10.60	1.09
1.800	1.36	4.800	4.35	7.800	3.26	10.80	1.09
2.000	1.36	5.000	4.35	8.000	3.26	11.00	1.09
2.200	1.63	5.200	6.53	8.200	1.90	11.20	1.09
2.400	1.63	5.400	6.53	8.400	1.90	11.40	1.09
2.600	1.63	5.600	16.32	8.600	1.90	11.60	1.09
2.800	1.63	5.800	37.54	8.800	1.90	11.80	1.09
3.000	1.63	6.000	71.81	9.000	1.90	12.00	1.09

				TOTALS
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
PEAK FLOW	(cms)=	0.19	0.04	0.222 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	41.26
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0063) ID= 1 DT=12.0 min | Area (ha)= 3.62 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=		71.81	31.03
over (min)		12.00	12.00
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.20	0.19	0.389 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	29.12
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.222	6.00	41.26
+ ID2= 2 (0005):	1.33	0.087	6.00	17.43
ID = 3 (0007):	2.78	0.310	6.00	30.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.310	6.00	30.00
+ ID2= 2 (0063):	3.62	0.389	6.00	29.12
ID = 1 (0007):	6.40	0.698	6.00	29.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.698	6.00	29.62
OUTFLOW: ID= 1 (0033)	6.400	0.051	7.00	29.52

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.33
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1199

ROUTE PIPE (0034) IN= 2---> OUT= 1 DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12

1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	<---- hydrograph ---->				<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.05	7.00	29.52	0.10	0.84
OUTFLOW: ID= 1 (0034)	6.40	0.05	7.42	29.52	0.10	0.84

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.389 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 16.979
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.312

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.480 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 17.144
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.315

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 17.259
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.317

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	2.19	0.50	2.689 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	40.25
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.13	0.04	0.172 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	38.22
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.17	6.00	38.22
MAJOR SYS.(ID= 2):	0.01	0.00	6.00	38.22
MINOR SYS.(ID= 3):	1.20	0.17	6.00	38.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0047)
ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.04	0.230 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	41.26
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)					
Inlet Cap.=0.363					
#of Inlets= 1					
Total(cms)= 0.4		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.50	0.23	6.00	41.26
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		1.50	0.23	6.00	41.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0035):	8.03	0.389	6.00	16.98
+	ID2= 2 (0036):	17.98	2.689	6.00	40.25
	ID = 3 (0040):	26.01	3.078	6.00	33.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0040):	26.01	3.078	6.00	33.07
+	ID2= 2 (0037):	10.64	0.480	6.00	17.14
	ID = 1 (0040):	36.65	3.558	6.00	28.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	36.65	3.558	6.00	28.44
+	ID2= 2 (0038):	2.11	0.088	6.00	17.26
	ID = 3 (0040):	38.76	3.646	6.00	27.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)

*** W A R N I N G : HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003

	ID1= 3 (0040):	38.76	3.646	6.00	27.84
+	ID2= 2 (0072):	0.00	0.000	0.00	0.00
	ID = 1 (0040):	38.76	3.646	6.00	27.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	38.76	3.646	6.00	27.84
+	ID2= 2 (0074):	0.01	0.003	6.00	38.22
	ID = 3 (0040):	38.77	3.649	6.00	27.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0034):	6.40	0.051	7.42	29.52
+	ID2= 2 (0040):	38.77	3.649	6.00	27.84
	ID = 3 (0041):	45.17	3.667	6.00	28.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	3.1150	0.9004
	1.2740	0.5550	3.6250	1.1600
	2.2650	0.7154	3.9640	1.3570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0041)	45.165	3.667	6.00	28.21
OUTFLOW: ID= 1 (0043)	45.165	0.996	6.33	28.21

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.16
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.4344

CALIB					
NASHYD (0044)	Area (ha)= 3.28		Curve Number (CN)= 74.0		
ID= 1 DT=12.0 min	Ia (mm)= 5.00		# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.10				

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW	(cms)=	0.156 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	11.104
TOTAL RAINFALL	(mm)=	54.400
RUNOFF COEFFICIENT	=	0.204

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

CALIB					
NASHYD (0046)	Area (ha)= 2.21		Curve Number (CN)= 74.0		
ID= 1 DT=12.0 min	Ia (mm)= 5.00		# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.23				

Unit Hyd Qpeak (cms)= 0.367

PEAK FLOW	(cms)=	0.103 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	17.069
TOTAL RAINFALL	(mm)=	54.400
RUNOFF COEFFICIENT	=	0.314

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

CALIB					
STANDHYD (0045)	Area (ha)= 10.16				
ID= 1 DT=12.0 min	Total Imp(%)= 66.00		Dir. Conn.(%)= 66.00		

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	1.34	0.25	1.585 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00

RUNOFF VOLUME (mm)=	53.40	19.69	41.94
TOTAL RAINFALL (mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT =	0.98	0.36	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0059)
ID= 1 DT=12.0 min

Area (ha)= 1.27
Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.17	0.03	0.201 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	42.61
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)
Inlet Cap.=0.320
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.20	6.00	42.61
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.27	0.20	6.00	42.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0070)
ID= 1 DT=12.0 min

Area (ha)= 2.50
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.38	1.12	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.27	0.08	0.355 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	38.23
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)
Inlet Cap.=0.550
#of Inlets= 1
Total(cms)= 0.6

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.35	6.00	38.23
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.35	6.00	38.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.156	6.00	11.10
+ ID2= 2 (0045):	10.16	1.585	6.00	41.94
ID = 3 (0048):	13.44	1.741	6.00	34.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	1.741	6.00	34.41
+ ID2= 2 (0046):	2.21	0.103	6.00	17.07
ID = 1 (0048):	15.65	1.844	6.00	31.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	1.844	6.00	31.96
+ ID2= 2 (0069):	1.27	0.201	6.00	42.61
ID = 3 (0048):	16.92	2.045	6.00	32.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	2.045	6.00	32.76
+ ID2= 2 (0071):	2.50	0.355	6.00	38.23
ID = 1 (0048):	19.42	2.400	6.00	33.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.42	2.400	6.00	33.47
+ ID2= 2 (0072):	1.50	0.230	6.00	41.26
ID = 3 (0048):	20.92	2.630	6.00	34.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |
-------------------
```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.9630	0.3823
0.5430	0.1233	1.3030	0.6907
0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	2.630	6.00	34.02
OUTFLOW: ID= 1 (0049)	20.920	0.788	6.20	34.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.96
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.2559

```
-------------------
| ROUTE PIPE (0050)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |
-------------------
```

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

<---- hydrograph ----> <--pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.79	6.20	34.02	0.37	2.16
OUTFLOW: ID= 1 (0050)	20.92	0.79	6.20	34.02	0.37	2.16

```
-------------------
| CALIB            |
| NASHYD    (0054) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.065 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 16.978
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.312

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

```
-------------------
| CALIB            |
| NASHYD    (0056) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 1.514
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.028

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

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-------------------
| CALIB            |
| NASHYD    (0058) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.101 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 17.303
TOTAL RAINFALL (mm)= 54.400
RUNOFF COEFFICIENT = 0.318

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

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-------------------
| CALIB            |
| STANDHYD  (0057) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	71.81	31.03
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.15 (ii)	8.59 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.07	0.01	0.076 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	43.27
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-------------------
| ADD HYD   (0073) |
|  1 +  2 =  3     |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.076	6.00	43.27
+ ID2= 2 (0058):	2.51	0.101	6.00	17.30
ID = 3 (0073):	2.98	0.177	6.00	21.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| DUHYD     (0066) |
| Inlet Cap.=0.181 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.18	6.00	21.40
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.18	6.00	21.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| CALIB            |
| STANDHYD  (0053) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
			TOTALS	
PEAK FLOW	(cms)=	0.65	0.18	0.839 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	38.57
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0055)
ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
			TOTALS	
PEAK FLOW	(cms)=	0.14	0.15	0.280 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	28.11
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0065)
ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		71.81	31.03	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.15 (ii)	8.59 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
			TOTALS	
PEAK FLOW	(cms)=	0.14	0.15	0.280 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	53.40	19.69	28.11
TOTAL RAINFALL	(mm)=	54.40	54.40	54.40
RUNOFF COEFFICIENT	=	0.98	0.36	0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	0.839	6.00	38.57
+ ID2= 2 (0054):	1.34	0.065	6.00	16.98
ID = 3 (0051):	7.20	0.904	6.00	34.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	0.904	6.00	34.55
+ ID2= 2 (0055):	2.71	0.280	6.00	28.11
ID = 1 (0051):	9.91	1.184	6.00	32.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.184	6.00	32.79
+ ID2= 2 (0056):	0.10	0.001	6.00	1.51
ID = 3 (0051):	10.01	1.185	6.00	32.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.185	6.00	32.48
+ ID2= 2 (0065):	2.71	0.280	6.00	28.11
ID = 1 (0051):	12.72	1.466	6.00	31.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	1.466	6.00	31.55
+ ID2= 2 (0066):	2.98	0.177	6.00	21.40
ID = 3 (0051):	15.70	1.642	6.00	29.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0069 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0051):	15.70	1.642	6.00	29.62
+ ID2= 2 (0069):	0.00	0.000	0.00	0.00
ID = 1 (0051):	15.70	1.642	6.00	29.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0050):	20.92	0.788	6.20	34.02
	+ ID2= 2 (0051):	15.70	1.642	6.00	29.62
	ID = 3 (0060):	36.62	2.268	6.00	32.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.5100	0.3577
DT= 5.0 min	0.2970	0.1233	0.6800	0.7154
	0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.620	2.268	6.00	32.14
OUTFLOW: ID= 1 (0061)	36.620	0.553	7.40	32.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.39
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.4487

****
** SIMULATION NUMBER: 3 **
****

READ STORM	Filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-f59c2b644911\a2d2cdd1
Ptotal= 62.70 mm	Comments: 10-Year 12-Hour SCS II Design Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.57	3.25	2.51	6.25	11.29	9.25	2.19
0.50	1.57	3.50	2.51	6.50	11.29	9.50	2.19
0.75	1.57	3.75	2.51	6.75	5.02	9.75	2.19
1.00	1.57	4.00	2.51	7.00	5.02	10.00	2.19
1.25	1.57	4.25	3.76	7.25	3.76	10.25	1.25
1.50	1.57	4.50	3.76	7.50	3.76	10.50	1.25
1.75	1.57	4.75	5.02	7.75	3.76	10.75	1.25
2.00	1.57	5.00	5.02	8.00	3.76	11.00	1.25
2.25	1.88	5.25	7.52	8.25	2.19	11.25	1.25
2.50	1.88	5.50	7.52	8.50	2.19	11.50	1.25
2.75	1.88	5.75	30.10	8.75	2.19	11.75	1.25
3.00	1.88	6.00	82.76	9.00	2.19	12.00	1.25

CALIB	Area (ha)= 0.91	Curve Number (CN)= 74.0
NASHYD (0011)	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
ID= 1 DT=12.0 min	U.H. Tp(hrs)= 0.17	

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.57	3.200	2.51	6.200	11.29	9.20	2.19
0.400	1.57	3.400	2.51	6.400	11.29	9.40	2.19
0.600	1.57	3.600	2.51	6.600	8.15	9.60	2.19
0.800	1.57	3.800	2.51	6.800	5.02	9.80	2.19
1.000	1.57	4.000	2.51	7.000	5.02	10.00	2.19
1.200	1.57	4.200	3.76	7.200	3.76	10.20	1.25
1.400	1.57	4.400	3.76	7.400	3.76	10.40	1.25
1.600	1.57	4.600	4.39	7.600	3.76	10.60	1.25
1.800	1.57	4.800	5.02	7.800	3.76	10.80	1.25
2.000	1.57	5.000	5.02	8.000	3.76	11.00	1.25
2.200	1.88	5.200	7.52	8.200	2.19	11.20	1.25
2.400	1.88	5.400	7.52	8.400	2.19	11.40	1.25
2.600	1.88	5.600	18.81	8.600	2.19	11.60	1.25
2.800	1.88	5.800	43.26	8.800	2.19	11.80	1.25
3.000	1.88	6.000	82.76	9.000	2.19	12.00	1.25

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.066 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 20.738
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.331

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

CALIB	Area (ha)= 3.87	
STANDHYD (0010)	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00
ID= 1 DT=12.0 min		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	82.76	39.25
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.54	0.14	0.683 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	47.35
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	Area (ha)= 6.86	
STANDHYD (0012)	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00
ID= 1 DT=12.0 min		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	82.76	39.25
over	(min)	12.00	12.00
Storage Coeff.	(min)=	3.53 (ii)	10.30 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10

				TOTALS
PEAK FLOW	(cms)=	0.95	0.23	1.174 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	47.35
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	Area (ha)= 2.95	
STANDHYD (0064)	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00
ID= 1 DT=12.0 min		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	82.76	39.25
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.375 (iii)
TIME TO PEAK	(hrs)=	6.00
RUNOFF VOLUME	(mm)=	34.10
TOTAL RAINFALL	(mm)=	62.70
RUNOFF COEFFICIENT	=	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.683	6.00	47.35
+ ID2= 2 (0011):	0.91	0.066	6.00	20.74
ID = 3 (0013):	4.78	0.749	6.00	42.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	0.749	6.00	42.28
+ ID2= 2 (0012):	6.86	1.174	6.00	47.35
ID = 1 (0013):	11.64	1.923	6.00	45.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	1.923	6.00	45.27
+ ID2= 2 (0064):	2.95	0.375	6.00	34.10
ID = 3 (0013):	14.59	2.299	6.00	43.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	2.299	6.00	43.01
OUTFLOW: ID= 1 (0021)	14.590	0.470	6.30	42.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.46
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.3024

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.47	6.30	42.99	0.30	1.73
OUTFLOW: ID= 1 (0031)	14.59	0.47	6.30	42.99	0.30	1.73

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.451 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 21.328
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.340

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	82.76	39.25
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

			TOTALS
PEAK FLOW	(cms)=	0.14	0.03	0.175 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	48.45
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB             |
| STANDHYD  (0017)  |    Area     (ha)=    2.34
|ID= 1 DT=12.0 min  |    Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.29          1.05
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      82.76         39.25
                over (min)      12.00         12.00
     Storage Coeff.  (min)=       1.09 (ii)     7.86 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.30          0.10          0.394 (iii)
     TIME TO PEAK    (hrs)=       6.00          6.00           6.00
     RUNOFF VOLUME    (mm)=      61.70         24.90          45.14
     TOTAL RAINFALL   (mm)=      62.70         62.70          62.70
     RUNOFF COEFFICIENT   =       0.98          0.40           0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0019) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0016):      6.53    0.451     6.00    21.33
        + ID2= 2 (0017):      2.34    0.394     6.00    45.14
          ==================================================
          ID = 3 (0019):      8.87    0.845     6.00    27.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0019) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0019):      8.87    0.845     6.00    27.61
        + ID2= 2 (0018):      0.97    0.175     6.00    48.45
          ==================================================
          ID = 1 (0019):      9.84    1.020     6.00    29.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0032) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):      9.84    1.020     6.00    29.66
        + ID2= 2 (0031):     14.59    0.470     6.30    42.99
          ==================================================
          ID = 3 (0032):     24.43    1.329     6.00    37.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0022) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000     0.0000   |   0.6510     0.4564
                           0.1220     0.0863   |   0.8770     0.7894
                           0.3620     0.1603   |   0.0000     0.0000

                                AREA     QPEAK      TPEAK        R.V.
                                (ha)     (cms)      (hrs)        (mm)
     INFLOW : ID= 2 (0032)     24.430     1.329       6.00       37.62
     OUTFLOW: ID= 1 (0022)     24.430     0.448       7.40       37.62

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 33.70
                   TIME SHIFT OF PEAK FLOW         (min)= 84.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.2482

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| CALIB            |
| NASHYD    (0023) |   Area     (ha)=  10.18   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=    0.27

     Unit Hyd Qpeak  (cms)=    1.440

     PEAK FLOW       (cms)=    0.533 (i)
     TIME TO PEAK    (hrs)=    6.000
     RUNOFF VOLUME    (mm)=   22.273
     TOTAL RAINFALL   (mm)=   62.700
     RUNOFF COEFFICIENT   =    0.355

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

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--------------------
| CALIB            |
| NASHYD    (0025) |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=    0.22

     Unit Hyd Qpeak  (cms)=    0.450

     PEAK FLOW       (cms)=    0.163 (i)
     TIME TO PEAK    (hrs)=    6.000
     RUNOFF VOLUME    (mm)=   21.855
     TOTAL RAINFALL   (mm)=   62.700
     RUNOFF COEFFICIENT   =    0.349

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

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| CALIB            |
| NASHYD    (0027) |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=    0.13

     Unit Hyd Qpeak  (cms)=    0.473

     PEAK FLOW       (cms)=    0.118 (i)
     TIME TO PEAK    (hrs)=    6.000
     RUNOFF VOLUME    (mm)=   18.336
     TOTAL RAINFALL   (mm)=   62.700
     RUNOFF COEFFICIENT   =    0.292

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

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| CALIB            |
| STANDHYD  (0024) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.76          1.95
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      82.76         39.25
                over (min)      12.00         12.00
     Storage Coeff.  (min)=       1.09 (ii)     7.86 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=       1.10          0.18          1.276 (iii)
     TIME TO PEAK    (hrs)=       6.00          6.00           6.00
     RUNOFF VOLUME    (mm)=      61.70         24.90          51.03
     TOTAL RAINFALL   (mm)=      62.70         62.70          62.70
     RUNOFF COEFFICIENT   =       0.98          0.40           0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
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(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min	Area (ha)= 0.85 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.24	0.61	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	82.76	39.25	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
			TOTALS
PEAK FLOW (cms)=	0.05	0.06	0.112 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	61.70	24.90	35.19
TOTAL RAINFALL (mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT =	0.98	0.40	0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.533	6.00	22.27
+ ID2= 2 (0024):	6.71	1.276	6.00	51.03
ID = 3 (0028):	16.89	1.809	6.00	33.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	1.809	6.00	33.70
+ ID2= 2 (0025):	2.59	0.163	6.00	21.85
ID = 1 (0028):	19.48	1.972	6.00	32.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	1.972	6.00	32.12
+ ID2= 2 (0027):	1.61	0.118	6.00	18.34
ID = 3 (0028):	21.09	2.090	6.00	31.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	2.090	6.00	31.07
+ ID2= 2 (0062):	0.85	0.112	6.00	35.19
ID = 1 (0028):	21.94	2.201	6.00	31.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.448	7.40	37.62
+ ID2= 2 (0028):	21.94	2.201	6.00	31.23
ID = 3 (0029):	46.37	2.456	6.00	34.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.3030	1.3940
	0.4380	0.4440	1.5000	1.8008
	0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	2.456	6.00	34.63
OUTFLOW: ID= 1 (0030)	46.370	0.528	8.30	34.63

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.51
TIME SHIFT OF PEAK FLOW (min)=138.00
MAXIMUM STORAGE USED (ha.m.)= 0.5348

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 1.33 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.57	3.083	2.51	6.083	11.29	9.08	2.19
0.167	1.57	3.167	2.51	6.167	11.29	9.17	2.19
0.250	1.57	3.250	2.51	6.250	11.29	9.25	2.19
0.333	1.57	3.333	2.51	6.333	11.29	9.33	2.19
0.417	1.57	3.417	2.51	6.417	11.29	9.42	2.19
0.500	1.57	3.500	2.51	6.500	11.29	9.50	2.19
0.583	1.57	3.583	2.51	6.583	5.02	9.58	2.19
0.667	1.57	3.667	2.51	6.667	5.02	9.67	2.19
0.750	1.57	3.750	2.51	6.750	5.02	9.75	2.19
0.833	1.57	3.833	2.51	6.833	5.02	9.83	2.19
0.917	1.57	3.917	2.51	6.917	5.02	9.92	2.19
1.000	1.57	4.000	2.51	7.000	5.02	10.00	2.19
1.083	1.57	4.083	3.76	7.083	3.76	10.08	1.25
1.167	1.57	4.167	3.76	7.167	3.76	10.17	1.25
1.250	1.57	4.250	3.76	7.250	3.76	10.25	1.25
1.333	1.57	4.333	3.76	7.333	3.76	10.33	1.25
1.417	1.57	4.417	3.76	7.417	3.76	10.42	1.25
1.500	1.57	4.500	3.76	7.500	3.76	10.50	1.25
1.583	1.57	4.583	5.02	7.583	3.76	10.58	1.25
1.667	1.57	4.667	5.02	7.667	3.76	10.67	1.25
1.750	1.57	4.750	5.02	7.750	3.76	10.75	1.25
1.833	1.57	4.833	5.02	7.833	3.76	10.83	1.25
1.917	1.57	4.917	5.02	7.917	3.76	10.92	1.25
2.000	1.57	5.000	5.02	8.000	3.76	11.00	1.25
2.083	1.88	5.083	7.52	8.083	2.19	11.08	1.25
2.167	1.88	5.167	7.52	8.167	2.19	11.17	1.25
2.250	1.88	5.250	7.52	8.250	2.19	11.25	1.25
2.333	1.88	5.333	7.52	8.333	2.19	11.33	1.25
2.417	1.88	5.417	7.52	8.417	2.19	11.42	1.25
2.500	1.88	5.500	7.52	8.500	2.19	11.50	1.25
2.583	1.88	5.583	30.10	8.583	2.19	11.58	1.25
2.667	1.88	5.667	30.10	8.667	2.19	11.67	1.25
2.750	1.88	5.750	30.10	8.750	2.19	11.75	1.25
2.833	1.88	5.833	82.76	8.833	2.19	11.83	1.25
2.917	1.88	5.917	82.76	8.917	2.19	11.92	1.25
3.000	1.88	6.000	82.76	9.000	2.19	12.00	1.25

Unit Hyd Qpeak (cms)= 0.391

```
     PEAK FLOW       (cms)=   0.113 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  22.432
     TOTAL RAINFALL   (mm)=  62.700
     RUNOFF COEFFICIENT   =   0.358

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0004) |   Area    (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.93          0.52
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN  |  TIME    RAIN  |'  TIME    RAIN  |  TIME    RAIN
       hrs   mm/hr  |   hrs   mm/hr  |'   hrs   mm/hr  |   hrs   mm/hr
     0.200    1.57  | 3.200    2.51  | 6.200   11.29  |  9.20    2.19
     0.400    1.57  | 3.400    2.51  | 6.400   11.29  |  9.40    2.19
     0.600    1.57  | 3.600    2.51  | 6.600    8.15  |  9.60    2.19
     0.800    1.57  | 3.800    2.51  | 6.800    5.02  |  9.80    2.19
     1.000    1.57  | 4.000    2.51  | 7.000    5.02  | 10.00    2.19
     1.200    1.57  | 4.200    3.76  | 7.200    3.76  | 10.20    1.25
     1.400    1.57  | 4.400    3.76  | 7.400    3.76  | 10.40    1.25
     1.600    1.57  | 4.600    4.39  | 7.600    3.76  | 10.60    1.25
     1.800    1.57  | 4.800    5.02  | 7.800    3.76  | 10.80    1.25
     2.000    1.57  | 5.000    5.02  | 8.000    3.76  | 11.00    1.25
     2.200    1.88  | 5.200    7.52  | 8.200    2.19  | 11.20    1.25
     2.400    1.88  | 5.400    7.52  | 8.400    2.19  | 11.40    1.25
     2.600    1.88  | 5.600   18.81  | 8.600    2.19  | 11.60    1.25
     2.800    1.88  | 5.800   43.26  | 8.800    2.19  | 11.80    1.25
     3.000    1.88  | 6.000   82.76  | 9.000    2.19  | 12.00    1.25

     Max.Eff.Inten.(mm/hr)=     82.76         39.25
                 over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.09 (ii)     7.86 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.21          0.05      0.262 (iii)
     TIME TO PEAK    (hrs)=      6.00          6.00       6.00
     RUNOFF VOLUME    (mm)=     61.70         24.90      48.45
     TOTAL RAINFALL   (mm)=     62.70         62.70      62.70
     RUNOFF COEFFICIENT   =      0.98          0.40       0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0063) |   Area    (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.01          2.61
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=     82.76         39.25
                 over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.09 (ii)     7.86 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.23          0.24      0.476 (iii)
     TIME TO PEAK    (hrs)=      6.00          6.00       6.00
     RUNOFF VOLUME    (mm)=     61.70         24.90      35.20
     TOTAL RAINFALL   (mm)=     62.70         62.70      62.70
     RUNOFF COEFFICIENT   =      0.98          0.40       0.56

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD   (0007) |
|   1 +   2 =   3  |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0004):     1.45   0.262     6.00    48.45
        + ID2= 2 (0005):     1.33   0.113     6.00    22.43
          ================================================
          ID = 3 (0007):     2.78   0.374     6.00    36.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0007) |
|   3 +   2 =   1  |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0007):     2.78   0.374     6.00    36.17
        + ID2= 2 (0063):     3.62   0.476     6.00    35.20
          ================================================
          ID = 1 (0007):     6.40   0.850     6.00    35.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0033) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE      OUTFLOW    STORAGE
--------------------      (cms)      (ha.m.)      (cms)      (ha.m.)
                          0.0000     0.0000       0.3260     0.8017
                          0.0790     0.1850       0.3960     0.9004
                          0.2270     0.3947       0.0000     0.0000

                              AREA     QPEAK     TPEAK      R.V.
                              (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0007)    6.400     0.850      6.00      35.76
     OUTFLOW: ID= 1 (0033)    6.400     0.062      7.00      35.66

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.28
                   TIME SHIFT OF PEAK FLOW          (min)= 60.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  0.1449

--------------------------------------------------------------------------------
--------------------
| ROUTE PIPE (0034)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 850.00
--------------------     Slope       (m/m)=  0.005
                         Manning n         =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)      (cu.m.)       (cms)        (m/s)        min
        0.09    .367E+02        0.0         0.80         17.68
        0.17    .102E+03        0.1         1.25         11.33
        0.26    .184E+03        0.3         1.61          8.81
        0.35    .278E+03        0.6         1.91          7.41
        0.43    .382E+03        1.0         2.18          6.51
        0.52    .492E+03        1.4         2.41          5.88
        0.61    .608E+03        1.9         2.61          5.43
        0.69    .727E+03        2.4         2.79          5.08
        0.78    .848E+03        2.9         2.95          4.81
        0.87    .970E+03        3.5         3.08          4.60
        0.96    .109E+04        4.1         3.20          4.43
        1.04    .121E+04        4.7         3.29          4.31
        1.13    .133E+04        5.2         3.36          4.22
        1.22    .144E+04        5.8         3.41          4.15
        1.30    .154E+04        6.2         3.44          4.12
        1.39    .163E+04        6.6         3.43          4.13
        1.48    .172E+04        6.9         3.40          4.17
        1.56    .178E+04        6.9         3.31          4.28
        1.65    .182E+04        6.5         3.02          4.70
```

	<---- hydrograph ---->				<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.06	7.00	35.66	0.11	0.88
OUTFLOW: ID= 1 (0034)	6.40	0.06	7.33	35.66	0.11	0.87

CALIB NASHYD (0035) ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.504 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 21.855
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.349

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

CALIB NASHYD (0037) ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.623 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 22.068
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.352

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

CALIB NASHYD (0038) ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.115 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 22.216
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.354

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

CALIB STANDHYD (0036) ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		82.76	39.25	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	2.52	0.65	3.174 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	47.35
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0039) ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		82.76	39.25	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.15	0.05	0.204 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	45.13
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.20	6.00	45.13
MAJOR SYS.(ID= 2):	0.06	0.03	6.00	45.13
MINOR SYS.(ID= 3):	1.15	0.17	6.00	45.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0047) ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		82.76	39.25	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.22	0.05	0.271 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	48.45
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

```
-------------------
| DUHYD     (0072) |
| Inlet Cap.=0.363 |
| #of Inlets=    1 |
| Total(cms)=  0.4 |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.27	6.00	48.45
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.50	0.27	6.00	48.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	8.03	0.504	6.00	21.85
+ ID2= 2 (0036):	17.98	3.174	6.00	47.35
ID = 3 (0040):	26.01	3.679	6.00	39.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	26.01	3.679	6.00	39.48
+ ID2= 2 (0037):	10.64	0.623	6.00	22.07
ID = 1 (0040):	36.65	4.301	6.00	34.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	36.65	4.301	6.00	34.42
+ ID2= 2 (0038):	2.11	0.115	6.00	22.22
ID = 3 (0040):	38.76	4.416	6.00	33.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
```

ID1= 3 (0040):	38.76	4.416	6.00	33.76
+ ID2= 2 (0072):	0.00	0.000	0.00	0.00
ID = 1 (0040):	38.76	4.416	6.00	33.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	38.76	4.416	6.00	33.76
+ ID2= 2 (0074):	0.06	0.035	6.00	45.13
ID = 3 (0040):	38.82	4.451	6.00	33.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0041) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0034):	6.40	0.061	7.33	35.66
+ ID2= 2 (0040):	38.82	4.451	6.00	33.77
ID = 3 (0041):	45.22	4.473	6.00	34.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |
-------------------
```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	3.1150	0.9004
1.2740	0.5550	3.6250	1.1600
2.2650	0.7154	3.9640	1.3570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0041)	45.215	4.473	6.00	34.20
OUTFLOW: ID= 1 (0043)	45.215	1.215	6.33	34.20

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.16
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.5302

```
-------------------
| CALIB            |
| NASHYD    (0044) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 3.28 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.10

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.201 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 14.294
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.228

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

```
-------------------
| CALIB            |
| NASHYD    (0046) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 2.21 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.23

Unit Hyd Qpeak (cms)= 0.367

PEAK FLOW (cms)= 0.134 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 21.971
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.350

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

```
-------------------
| CALIB            |
| STANDHYD  (0045) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 10.16
Total Imp(%)= 66.00 Dir. Conn.(%)= 66.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	6.71	3.45	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	82.76	39.25	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
			TOTALS
PEAK FLOW (cms)=	1.54	0.32	1.863 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	61.70	24.90	49.19
TOTAL RAINFALL (mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT =	0.98	0.40	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0059) ID= 1 DT=12.0 min	Area (ha)= 1.27 Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.86	0.41	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	82.76	39.25	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
		TOTALS	
PEAK FLOW (cms)=	0.20	0.04	0.236 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	61.70	24.90	49.92
TOTAL RAINFALL (mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT =	0.98	0.40	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069) Inlet Cap.=0.320 #of Inlets= 1 Total(cms)= 0.3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.24	6.00	49.92
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.27	0.24	6.00	49.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0070) ID= 1 DT=12.0 min	Area (ha)= 2.50 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.38	1.12	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	82.76	39.25	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
		TOTALS	
PEAK FLOW (cms)=	0.32	0.10	0.421 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	61.70	24.90	45.14
TOTAL RAINFALL (mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT =	0.98	0.40	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071) Inlet Cap.=0.550 #of Inlets= 1 Total(cms)= 0.6	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.42	6.00	45.14
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.42	6.00	45.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.201	6.00	14.29
+ ID2= 2 (0045):	10.16	1.863	6.00	49.19
ID = 3 (0048):	13.44	2.064	6.00	40.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	2.064	6.00	40.67
+ ID2= 2 (0046):	2.21	0.134	6.00	21.97
ID = 1 (0048):	15.65	2.198	6.00	38.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	2.198	6.00	38.03
+ ID2= 2 (0069):	1.27	0.236	6.00	49.92
ID = 3 (0048):	16.92	2.435	6.00	38.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	2.435	6.00	38.92
+ ID2= 2 (0071):	2.50	0.421	6.00	45.14
ID = 1 (0048):	19.42	2.855	6.00	39.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.42	2.855	6.00	39.72
+ ID2= 2 (0072):	1.50	0.271	6.00	48.45
ID = 3 (0048):	20.92	3.126	6.00	40.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE

(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.9630	0.3823
0.5430	0.1233	1.3030	0.6907
0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	3.126	6.00	40.35
OUTFLOW: ID= 1 (0049)	20.920	0.861	6.20	40.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.55
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.3103

ROUTE PIPE (0050)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
	<---- hydrograph ---->				<-pipe / channel->	
INFLOW : ID= 2 (0049)	20.92	0.86	6.20	40.35	0.39	2.22
OUTFLOW: ID= 1 (0050)	20.92	0.86	6.30	40.34	0.39	2.21

CALIB
NASHYD (0054)
ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.084 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 21.855
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.349

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

CALIB
NASHYD (0056)
ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 1.948
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.031

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

CALIB
NASHYD (0058)
ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 22.273
TOTAL RAINFALL (mm)= 62.700
RUNOFF COEFFICIENT = 0.355

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

CALIB
STANDHYD (0057)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.33	0.14
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	82.76	39.25
over (min)	12.00	12.00
Storage Coeff. (min)=	1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.11

			TOTALS
PEAK FLOW	(cms)=	0.08	0.01	0.089 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	50.65
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.089	6.00	50.65
+ ID2= 2 (0058):	2.51	0.131	6.00	22.27
ID = 3 (0073):	2.98	0.220	6.00	26.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)
Inlet Cap.=0.181
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.22	6.00	26.75
MAJOR SYS.(ID= 2):	0.11	0.04	6.00	26.75
MINOR SYS.(ID= 3):	2.87	0.18	6.00	26.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053)
ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.28	2.58
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00

Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		82.76	39.25	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.75	0.24	0.994 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	61.70	24.90	45.51
TOTAL RAINFALL	(mm)=	62.70	62.70	62.70
RUNOFF COEFFICIENT	=	0.98	0.40	0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0055)
ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		82.76	39.25
over (min)		12.00	12.00
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.16	0.19 0.345 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	61.70	24.90 34.10
TOTAL RAINFALL	(mm)=	62.70	62.70 62.70
RUNOFF COEFFICIENT	=	0.98	0.40 0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0065)
ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		82.76	39.25
over (min)		12.00	12.00
Storage Coeff. (min)=		1.09 (ii)	7.86 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.16	0.19 0.345 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	61.70	24.90 34.10
TOTAL RAINFALL	(mm)=	62.70	62.70 62.70
RUNOFF COEFFICIENT	=	0.98	0.40 0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	0.994	6.00	45.51
+ ID2= 2 (0054):	1.34	0.084	6.00	21.85
ID = 3 (0051):	7.20	1.079	6.00	41.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.079	6.00	41.10
+ ID2= 2 (0055):	2.71	0.345	6.00	34.10
ID = 1 (0051):	9.91	1.424	6.00	39.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.424	6.00	39.19
+ ID2= 2 (0056):	0.10	0.001	6.00	1.95
ID = 3 (0051):	10.01	1.424	6.00	38.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.424	6.00	38.82
+ ID2= 2 (0065):	2.71	0.345	6.00	34.10
ID = 1 (0051):	12.72	1.769	6.00	37.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	1.769	6.00	37.81
+ ID2= 2 (0066):	2.87	0.181	6.00	26.75
ID = 3 (0051):	15.59	1.950	6.00	35.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0069 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0051):	15.59	1.950	6.00	35.77
+ ID2= 2 (0069):	0.00	0.000	0.00	0.00
ID = 1 (0051):	15.59	1.950	6.00	35.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0050):	20.92	0.858	6.30	40.34
	+ ID2= 2 (0051):	15.59	1.950	6.00	35.77
	ID = 3 (0060):	36.51	2.641	6.00	38.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.5100	0.3577
DT= 5.0 min	0.2970	0.1233	0.6800	0.7154
	0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.515	2.641	6.00	38.40
OUTFLOW: ID= 1 (0061)	36.515	0.602	7.60	38.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.81
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.5521

****
** SIMULATION NUMBER: 4 **
****

READ STORM	Filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-f59c2b644911\38e05848
Ptotal= 73.10 mm	Comments: 25-Year 12-Hour SCS II Design Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.83	3.25	2.92	6.25	13.16	9.25	2.56
0.50	1.83	3.50	2.92	6.50	13.16	9.50	2.56
0.75	1.83	3.75	2.92	6.75	5.85	9.75	2.56
1.00	1.83	4.00	2.92	7.00	5.85	10.00	2.56
1.25	1.83	4.25	4.39	7.25	4.39	10.25	1.46
1.50	1.83	4.50	4.39	7.50	4.39	10.50	1.46
1.75	1.83	4.75	5.85	7.75	4.39	10.75	1.46
2.00	1.83	5.00	5.85	8.00	4.39	11.00	1.46
2.25	2.19	5.25	8.77	8.25	2.56	11.25	1.46
2.50	2.19	5.50	8.77	8.50	2.56	11.50	1.46
2.75	2.19	5.75	35.09	8.75	2.56	11.75	1.46
3.00	2.19	6.00	96.49	9.00	2.56	12.00	1.46

CALIB		
NASHYD (0011)	Area (ha)= 0.91	Curve Number (CN)= 74.0
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17	

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.83	3.200	2.92	6.200	13.16	9.20	2.56
0.400	1.83	3.400	2.92	6.400	13.16	9.40	2.56
0.600	1.83	3.600	2.92	6.600	9.50	9.60	2.56
0.800	1.83	3.800	2.92	6.800	5.85	9.80	2.56
1.000	1.83	4.000	2.92	7.000	5.85	10.00	2.56
1.200	1.83	4.200	4.39	7.200	4.39	10.20	1.46
1.400	1.83	4.400	4.39	7.400	4.39	10.40	1.46
1.600	1.83	4.600	5.12	7.600	4.39	10.60	1.46
1.800	1.83	4.800	5.85	7.800	4.39	10.80	1.46
2.000	1.83	5.000	5.85	8.000	4.39	11.00	1.46
2.200	2.19	5.200	8.77	8.200	2.56	11.20	1.46
2.400	2.19	5.400	8.77	8.400	2.56	11.40	1.46
2.600	2.19	5.600	21.93	8.600	2.56	11.60	1.46
2.800	2.19	5.800	50.44	8.800	2.56	11.80	1.46
3.000	2.19	6.000	96.49	9.000	2.56	12.00	1.46

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.086 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 26.978
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.369

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

CALIB		
STANDHYD (0010)	Area (ha)= 3.87	
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	96.49	50.24
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.817 (iii)
TIME TO PEAK	(hrs)=	6.00
RUNOFF VOLUME	(mm)=	56.41
TOTAL RAINFALL	(mm)=	73.10
RUNOFF COEFFICIENT	=	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0012)	Area (ha)= 6.86	
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	96.49	50.24
over	(min)	12.00	12.00
Storage Coeff.	(min)=	3.32 (ii)	9.45 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10

		TOTALS
PEAK FLOW	(cms)=	1.408 (iii)
TIME TO PEAK	(hrs)=	6.00
RUNOFF VOLUME	(mm)=	56.41
TOTAL RAINFALL	(mm)=	73.10
RUNOFF COEFFICIENT	=	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0064)	Area (ha)= 2.95	
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50

Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.20	0.27	0.468 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	41.93
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.817	6.00	56.41
+ ID2= 2 (0011):	0.91	0.086	6.00	26.98
ID = 3 (0013):	4.78	0.903	6.00	50.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	0.903	6.00	50.81
+ ID2= 2 (0012):	6.86	1.408	6.00	56.41
ID = 1 (0013):	11.64	2.312	6.00	54.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	2.312	6.00	54.11
+ ID2= 2 (0064):	2.95	0.468	6.00	41.93
ID = 3 (0013):	14.59	2.780	6.00	51.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	2.780	6.00	51.65
OUTFLOW: ID= 1 (0021)	14.590	0.543	6.30	51.63

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.54
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.3645

ROUTE PIPE (0031)
IN= 2---> OUT= 1

Pipe Number = 1.00
Diameter (mm)=1650.00
DT= 5.0 min
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.54	6.30	51.63	0.32	1.81
OUTFLOW: ID= 1 (0031)	14.59	0.54	6.30	51.63	0.32	1.81

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW	(cms)=	0.589 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	27.745
TOTAL RAINFALL	(mm)=	73.100
RUNOFF COEFFICIENT	=	0.380

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.17	0.04	0.209 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	57.62
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB

STANDHYD (0017)	ID= 1 DT=12.0 min	Area (ha)= 2.34 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.34	0.13	0.474 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	54.00
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0016):	6.53	0.589	6.00	27.75
+	ID2= 2 (0017):	2.34	0.474	6.00	54.00
	ID = 3 (0019):	8.87	1.063	6.00	34.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)	3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0019):	8.87	1.063	6.00	34.67
+	ID2= 2 (0018):	0.97	0.209	6.00	57.62
	ID = 1 (0019):	9.84	1.272	6.00	36.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0019):	9.84	1.272	6.00	36.93
+	ID2= 2 (0031):	14.59	0.544	6.30	51.63
	ID = 3 (0032):	24.43	1.654	6.00	45.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)	IN= 2---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.6510	0.4564
			0.1220	0.0863	0.8770	0.7894
			0.3620	0.1603	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0032)	24.430	1.654	6.00	45.71
OUTFLOW:	ID= 1 (0022)	24.430	0.511	7.50	45.70

PEAK FLOW REDUCTION [Qout/Qin](%)= 30.90
TIME SHIFT OF PEAK FLOW (min)= 90.00

MAXIMUM STORAGE USED (ha.m.)= 0.3131

CALIB	NASHYD (0023)	ID= 1 DT=12.0 min	Area (ha)= 10.18 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.27	Curve Number (CN)= 74.0 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.700 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.975
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.396

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

CALIB	NASHYD (0025)	ID= 1 DT=12.0 min	Area (ha)= 2.59 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.22	Curve Number (CN)= 74.0 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.213 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.431
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.389

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

CALIB	NASHYD (0027)	ID= 1 DT=12.0 min	Area (ha)= 1.61 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.13	Curve Number (CN)= 74.0 # of Linear Res.(N)= 3.00

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.153 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 23.853
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.326

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

CALIB	STANDHYD (0024)	ID= 1 DT=12.0 min	Area (ha)= 6.71 Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.28	0.24	1.515 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	60.43
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0062) ID= 1 DT=12.0 min	Area (ha)= 0.85 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.24	0.61	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		96.49	50.24	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.06	0.07	0.139 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	43.13
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.700	6.00	28.98
+ ID2= 2 (0024):	6.71	1.515	6.00	60.43
ID = 3 (0028):	16.89	2.215	6.00	41.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.215	6.00	41.47
+ ID2= 2 (0025):	2.59	0.213	6.00	28.43
ID = 1 (0028):	19.48	2.428	6.00	39.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	2.428	6.00	39.74
+ ID2= 2 (0027):	1.61	0.153	6.00	23.85
ID = 3 (0028):	21.09	2.581	6.00	38.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	2.581	6.00	38.53
+ ID2= 2 (0062):	0.85	0.139	6.00	43.13
ID = 1 (0028):	21.94	2.720	6.00	38.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.511	7.50	45.70
+ ID2= 2 (0028):	21.94	2.720	6.00	38.70
ID = 3 (0029):	46.37	3.072	6.00	42.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.072	6.00	42.43
OUTFLOW: ID= 1 (0030)	46.370	0.633	8.20	42.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.62
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.6404

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 1.33 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.83	3.083	2.92	6.083	13.16	9.08	2.56
0.167	1.83	3.167	2.92	6.167	13.16	9.17	2.56
0.250	1.83	3.250	2.92	6.250	13.16	9.25	2.56
0.333	1.83	3.333	2.92	6.333	13.16	9.33	2.56
0.417	1.83	3.417	2.92	6.417	13.16	9.42	2.56
0.500	1.83	3.500	2.92	6.500	13.16	9.50	2.56
0.583	1.83	3.583	2.92	6.583	5.85	9.58	2.56
0.667	1.83	3.667	2.92	6.667	5.85	9.67	2.56
0.750	1.83	3.750	2.92	6.750	5.85	9.75	2.56
0.833	1.83	3.833	2.92	6.833	5.85	9.83	2.56
0.917	1.83	3.917	2.92	6.917	5.85	9.92	2.56
1.000	1.83	4.000	2.92	7.000	5.85	10.00	2.56
1.083	1.83	4.083	4.39	7.083	4.39	10.08	1.46
1.167	1.83	4.167	4.39	7.167	4.39	10.17	1.46
1.250	1.83	4.250	4.39	7.250	4.39	10.25	1.46
1.333	1.83	4.333	4.39	7.333	4.39	10.33	1.46
1.417	1.83	4.417	4.39	7.417	4.39	10.42	1.46
1.500	1.83	4.500	4.39	7.500	4.39	10.50	1.46
1.583	1.83	4.583	5.85	7.583	4.39	10.58	1.46
1.667	1.83	4.667	5.85	7.667	4.39	10.67	1.46
1.750	1.83	4.750	5.85	7.750	4.39	10.75	1.46
1.833	1.83	4.833	5.85	7.833	4.39	10.83	1.46
1.917	1.83	4.917	5.85	7.917	4.39	10.92	1.46
2.000	1.83	5.000	5.85	8.000	4.39	11.00	1.46
2.083	2.19	5.083	8.77	8.083	2.56	11.08	1.46
2.167	2.19	5.167	8.77	8.167	2.56	11.17	1.46
2.250	2.19	5.250	8.77	8.250	2.56	11.25	1.46
2.333	2.19	5.333	8.77	8.333	2.56	11.33	1.46
2.417	2.19	5.417	8.77	8.417	2.56	11.42	1.46
2.500	2.19	5.500	8.77	8.500	2.56	11.50	1.46
2.583	2.19	5.583	35.09	8.583	2.56	11.58	1.46
2.667	2.19	5.667	35.09	8.667	2.56	11.67	1.46
2.750	2.19	5.750	35.09	8.750	2.56	11.75	1.46
2.833	2.19	5.833	96.49	8.833	2.56	11.83	1.46
2.917	2.19	5.917	96.49	8.917	2.56	11.92	1.46
3.000	2.19	6.000	96.49	9.000	2.56	12.00	1.46

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.147 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 29.182

TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.399

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

CALIB	
STANDHYD (0004)	Area (ha)= 1.45
ID= 1 DT=12.0 min	Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	1.83	3.200	2.92	6.200	13.16	9.20	2.56
0.400	1.83	3.400	2.92	6.400	13.16	9.40	2.56
0.600	1.83	3.600	2.92	6.600	9.50	9.60	2.56
0.800	1.83	3.800	2.92	6.800	5.85	9.80	2.56
1.000	1.83	4.000	2.92	7.000	5.85	10.00	2.56
1.200	1.83	4.200	4.39	7.200	4.39	10.20	1.46
1.400	1.83	4.400	4.39	7.400	4.39	10.40	1.46
1.600	1.83	4.600	5.12	7.600	4.39	10.60	1.46
1.800	1.83	4.800	5.85	7.800	4.39	10.80	1.46
2.000	1.83	5.000	5.85	8.000	4.39	11.00	1.46
2.200	2.19	5.200	8.77	8.200	2.56	11.20	1.46
2.400	2.19	5.400	8.77	8.400	2.56	11.40	1.46
2.600	2.19	5.600	21.93	8.600	2.56	11.60	1.46
2.800	2.19	5.800	50.44	8.800	2.56	11.80	1.46
3.000	2.19	6.000	96.49	9.000	2.56	12.00	1.46

Max.Eff.Inten.	(mm/hr)=	96.49	50.24	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.25	0.06	0.313 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	57.62
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	
STANDHYD (0063)	Area (ha)= 3.62
ID= 1 DT=12.0 min	Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.	(mm/hr)=	96.49	50.24	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.27	0.32	0.591 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	43.14
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0004):	1.45	0.313	6.00	57.62
	+ ID2= 2 (0005):	1.33	0.147	6.00	29.18
	ID = 3 (0007):	2.78	0.459	6.00	44.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0007):	2.78	0.459	6.00	44.22
	+ ID2= 2 (0063):	3.62	0.591	6.00	43.14
	ID = 1 (0007):	6.40	1.050	6.00	43.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)				
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)		6.400	1.050	6.00	43.77
OUTFLOW: ID= 1 (0033)		6.400	0.076	7.00	43.68
PEAK FLOW REDUCTION [Qout/Qin](%)=			7.23		
TIME SHIFT OF PEAK FLOW (min)=			60.00		
MAXIMUM STORAGE USED (ha.m.)=			0.1778		

ROUTE PIPE (0034)		
IN= 2---> OUT= 1	Pipe Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 850.00
	Slope	(m/m)= 0.005
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

		<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)		6.40	0.08	7.00	43.68	0.12	0.92

OUTFLOW: ID= 1 (0034) 6.40 0.08 7.33 43.68 0.12 0.92

CALIB			
NASHYD (0035)	Area (ha)= 8.03	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.22		

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.660 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.431
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.389

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

CALIB			
NASHYD (0037)	Area (ha)= 10.64	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.24		

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.816 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.709
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.393

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

CALIB			
NASHYD (0038)	Area (ha)= 2.11	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.151 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.901
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.395

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

CALIB		
STANDHYD (0036)	Area (ha)= 17.98	
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	2.94	0.86	3.798 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	56.41
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB		
STANDHYD (0039)	Area (ha)= 1.21	
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.18	0.07	0.245 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	53.99
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)				
Inlet Cap.=0.169				
#of Inlets= 1				
Total(cms)= 0.2	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.25	6.00	53.99
MAJOR SYS.(ID= 2):	0.10	0.08	6.00	53.99
MINOR SYS.(ID= 3):	1.11	0.17	6.00	53.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD (0047)	Area (ha)= 1.50	
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		96.49	50.24
over (min)		12.00	12.00
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.26	0.07	0.323 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	57.62
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)	
Inlet Cap.=0.363	
#of Inlets= 1	

Total(cms)= 0.4		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):		1.50	0.32	6.00	57.62
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		1.50	0.32	6.00	57.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) | 1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):		8.03	0.660	6.00	28.43
+ ID2= 2 (0036):		17.98	3.798	6.00	56.41
ID = 3 (0040):		26.01	4.459	6.00	47.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) | 3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):		26.01	4.459	6.00	47.77
+ ID2= 2 (0037):		10.64	0.816	6.00	28.71
ID = 1 (0040):		36.65	5.275	6.00	42.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) | 1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):		36.65	5.275	6.00	42.24
+ ID2= 2 (0038):		2.11	0.151	6.00	28.90
ID = 3 (0040):		38.76	5.425	6.00	41.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) | 3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0072 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
ID1= 3 (0040):		38.76	5.425	6.00	41.51
+ ID2= 2 (0072):		0.00	0.000	0.00	0.00
ID = 1 (0040):		38.76	5.425	6.00	41.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040) | 1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):		38.76	5.425	6.00	41.51
+ ID2= 2 (0074):		0.10	0.076	6.00	53.99
ID = 3 (0040):		38.86	5.501	6.00	41.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0041) | 1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0034):		6.40	0.075	7.33	43.68
+ ID2= 2 (0040):		38.86	5.501	6.00	41.54
ID = 3 (0041):		45.26	5.529	6.00	42.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0043) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	3.1150	0.9004
1.2740	0.5550	3.6250	1.1600
2.2650	0.7154	3.9640	1.3570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0041)	45.261	5.529	6.00	42.05
OUTFLOW: ID= 1 (0043)	45.261	1.771	6.25	42.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 32.02
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.6363

CALIB | NASHYD (0044) | ID= 1 DT=12.0 min

Area (ha)= 3.28 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.10

Unit Hyd Qpeak (cms)= 1.253

PEAK FLOW (cms)= 0.261 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 18.595
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.254

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

CALIB | NASHYD (0046) | ID= 1 DT=12.0 min

Area (ha)= 2.21 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.23

Unit Hyd Qpeak (cms)= 0.367

PEAK FLOW (cms)= 0.176 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.583
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.391

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

CALIB | STANDHYD (0045) | ID= 1 DT=12.0 min

Area (ha)= 10.16
Total Imp(%)= 66.00 Dir. Conn.(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		96.49	50.24	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.80	0.42	2.220 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	58.42
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0059)	Area (ha)= 1.27		
ID= 1 DT=12.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		96.49	50.24	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.23	0.05	0.281 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	59.22
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)				
Inlet Cap.=0.320				
#of Inlets= 1				
Total(cms)= 0.3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.28	6.00	59.22
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.27	0.28	6.00	59.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0070)	Area (ha)= 2.50		
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.38	1.12	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		96.49	50.24	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.37	0.14	0.506 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	54.00
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)				
Inlet Cap.=0.550				
#of Inlets= 1				
Total(cms)= 0.6	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.51	6.00	54.00
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.51	6.00	54.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.261	6.00	18.59
+ ID2= 2 (0045):	10.16	2.220	6.00	58.42
ID = 3 (0048):	13.44	2.482	6.00	48.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	2.482	6.00	48.70
+ ID2= 2 (0046):	2.21	0.176	6.00	28.58
ID = 1 (0048):	15.65	2.657	6.00	45.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	2.657	6.00	45.86
+ ID2= 2 (0069):	1.27	0.281	6.00	59.22
ID = 3 (0048):	16.92	2.938	6.00	46.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.92	2.938	6.00	46.86
+ ID2= 2 (0071):	2.50	0.506	6.00	54.00
ID = 1 (0048):	19.42	3.445	6.00	47.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.42	3.445	6.00	47.78
+ ID2= 2 (0072):	1.50	0.323	6.00	57.62
ID = 3 (0048):	20.92	3.768	6.00	48.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.9630	0.3823
	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	3.768	6.00	48.49
OUTFLOW: ID= 1 (0049)	20.920	0.958	6.20	48.49

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.44
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.3822

ROUTE PIPE (0050)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.96	6.20	48.49	0.41	2.29
OUTFLOW: ID= 1 (0050)	20.92	0.96	6.30	48.48	0.41	2.29

CALIB
NASHYD (0054)
ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.110 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.431
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.389

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

CALIB
NASHYD (0056)
ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 2.535
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.035

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

CALIB
NASHYD (0058)
ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.173 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.975
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.396

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

CALIB
STANDHYD (0057)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.33	0.14	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	96.49	50.24	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.02 (ii)	7.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.02	0.105 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	72.10	31.87	60.02
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.44	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.105	6.00	60.02
+ ID2= 2 (0058):	2.51	0.173	6.00	28.97
ID = 3 (0073):	2.98	0.278	6.00	33.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)
Inlet Cap.=0.181
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.28	6.00	33.87
MAJOR SYS.(ID= 2):	0.21	0.10	6.00	33.87
MINOR SYS.(ID= 3):	2.77	0.18	6.00	33.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053)
ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	96.49	50.24

```
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       1.02 (ii)    7.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.88         0.32      1.195 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00       6.00
     RUNOFF VOLUME    (mm)=      72.10        31.87      54.40
     TOTAL RAINFALL   (mm)=      73.10        73.10      73.10
     RUNOFF COEFFICIENT   =       0.99         0.44       0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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------------------
| CALIB                |
| STANDHYD  (0055)     |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min     |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      96.49        50.24
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       1.02 (ii)    7.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.25       0.430 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00       6.00
     RUNOFF VOLUME    (mm)=      72.10        31.87      41.93
     TOTAL RAINFALL   (mm)=      73.10        73.10      73.10
     RUNOFF COEFFICIENT   =       0.99         0.44       0.57

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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------------------
| CALIB                |
| STANDHYD  (0065)     |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min     |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      96.49        50.24
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       1.02 (ii)    7.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.25       0.430 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00       6.00
     RUNOFF VOLUME    (mm)=      72.10        31.87      41.93
     TOTAL RAINFALL   (mm)=      73.10        73.10      73.10
     RUNOFF COEFFICIENT   =       0.99         0.44       0.57

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0053):     5.86   1.195     6.00    54.40
        + ID2= 2 (0054):     1.34   0.110     6.00    28.43
          ================================================
          ID = 3 (0051):     7.20   1.305     6.00    49.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0051):     7.20   1.305     6.00    49.57
        + ID2= 2 (0055):     2.71   0.430     6.00    41.93
          ================================================
          ID = 1 (0051):     9.91   1.736     6.00    47.48

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0051):     9.91   1.736     6.00    47.48
        + ID2= 2 (0056):     0.10   0.001     6.00     2.53
          ================================================
          ID = 3 (0051):    10.01   1.737     6.00    47.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0051):    10.01   1.737     6.00    47.03
        + ID2= 2 (0065):     2.71   0.430     6.00    41.93
          ================================================
          ID = 1 (0051):    12.72   2.167     6.00    45.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0051):    12.72   2.167     6.00    45.94
        + ID2= 2 (0066):     2.77   0.181     6.00    33.87
          ================================================
          ID = 3 (0051):    15.49   2.348     6.00    43.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0051):    15.49   2.348     6.00    43.78
        + ID2= 2 (0069):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0051):    15.49   2.348     6.00    43.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------          (ha)     (cms)    (hrs)     (mm)
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```
   ID1= 1 (0050):    20.92   0.956     6.30    48.48
 + ID2= 2 (0051):    15.49   2.348     6.00    43.78
   ================================================
   ID = 3 (0060):    36.41   3.110     6.00    46.50
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5100	0.3577
0.2970	0.1233	0.6800	0.7154
0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.414	3.110	6.00	46.50
OUTFLOW: ID= 1 (0061)	36.414	0.667	7.90	46.49

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.45
TIME SHIFT OF PEAK FLOW (min)=114.00
MAXIMUM STORAGE USED (ha.m.)= 0.6881

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  ****************************
  ** SIMULATION NUMBER:   5 **
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READ STORM
Ptotal= 80.80 mm
Filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-f59c2b644911\684d4ea3
Comments: 50-Year 12-Hour SCS II Design Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.02	3.25	3.23	6.25	14.54	9.25	2.83
0.50	2.02	3.50	3.23	6.50	14.54	9.50	2.83
0.75	2.02	3.75	3.23	6.75	6.46	9.75	2.83
1.00	2.02	4.00	3.23	7.00	6.46	10.00	2.83
1.25	2.02	4.25	4.85	7.25	4.85	10.25	1.62
1.50	2.02	4.50	4.85	7.50	4.85	10.50	1.62
1.75	2.02	4.75	6.46	7.75	4.85	10.75	1.62
2.00	2.02	5.00	6.46	8.00	4.85	11.00	1.62
2.25	2.42	5.25	9.70	8.25	2.83	11.25	1.62
2.50	2.42	5.50	9.70	8.50	2.83	11.50	1.62
2.75	2.42	5.75	38.78	8.75	2.83	11.75	1.62
3.00	2.42	6.00	106.66	9.00	2.83	12.00	1.62

CALIB
NASHYD (0011)
ID= 1 DT=12.0 min
Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.02	3.200	3.23	6.200	14.54	9.20	2.83
0.400	2.02	3.400	3.23	6.400	14.54	9.40	2.83
0.600	2.02	3.600	3.23	6.600	10.50	9.60	2.83
0.800	2.02	3.800	3.23	6.800	6.46	9.80	2.83
1.000	2.02	4.000	3.23	7.000	6.46	10.00	2.83
1.200	2.02	4.200	4.85	7.200	4.85	10.20	1.62
1.400	2.02	4.400	4.85	7.400	4.85	10.40	1.62
1.600	2.02	4.600	5.66	7.600	4.85	10.60	1.62
1.800	2.02	4.800	6.46	7.800	4.85	10.80	1.62
2.000	2.02	5.000	6.46	8.000	4.85	11.00	1.62
2.200	2.42	5.200	9.70	8.200	2.83	11.20	1.62
2.400	2.42	5.400	9.70	8.400	2.83	11.40	1.62
2.600	2.42	5.600	24.24	8.600	2.83	11.60	1.62
2.800	2.42	5.800	55.75	8.800	2.83	11.80	1.62
3.000	2.42	6.000	106.66	9.000	2.83	12.00	1.62

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.102 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 31.864
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.394

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

CALIB
STANDHYD (0010)
ID= 1 DT=12.0 min
Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.36	1.51	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.70	0.22	0.919 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	63.23
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0012)
ID= 1 DT=12.0 min
Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	213.85	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		3.19 (ii)	8.95 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	1.23	0.36	1.585 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	63.23
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0064)
ID= 1 DT=12.0 min
Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=	106.66	58.79		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.98 (ii)	6.74 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.22	0.32	0.540 (iii)	
TIME TO PEAK (hrs)=	6.00	6.00	6.00	
RUNOFF VOLUME (mm)=	79.80	37.31	47.93	
TOTAL RAINFALL (mm)=	80.80	80.80	80.80	
RUNOFF COEFFICIENT =	0.99	0.46	0.59	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.919	6.00	63.23
+ ID2= 2 (0011):	0.91	0.102	6.00	31.86
ID = 3 (0013):	4.78	1.021	6.00	57.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	1.021	6.00	57.26
+ ID2= 2 (0012):	6.86	1.585	6.00	63.23
ID = 1 (0013):	11.64	2.606	6.00	60.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	2.606	6.00	60.78
+ ID2= 2 (0064):	2.95	0.540	6.00	47.93
ID = 3 (0013):	14.59	3.146	6.00	58.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	3.146	6.00	58.18
OUTFLOW: ID= 1 (0021)	14.590	0.599	6.30	58.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.05
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.4123

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.60	6.30	58.16	0.34	1.88
OUTFLOW: ID= 1 (0031)	14.59	0.60	6.30	58.16	0.34	1.88

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)=	6.53	Curve Number (CN)=	74.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.19		

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW	(cms)=	0.697 (i)
TIME TO PEAK	(hrs)=	6.000
RUNOFF VOLUME	(mm)=	32.771
TOTAL RAINFALL	(mm)=	80.800
RUNOFF COEFFICIENT	=	0.406

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		106.66	58.79
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.18	0.05 0.235 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	79.80	37.31 64.50
TOTAL RAINFALL	(mm)=	80.80	80.80 80.80
RUNOFF COEFFICIENT	=	0.99	0.46 0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	1.29	1.05	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	106.66	58.79	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.38	0.15	0.534 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	60.68
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.697	6.00	32.77
+ ID2= 2 (0017):	2.34	0.534	6.00	60.68
ID = 3 (0019):	8.87	1.232	6.00	40.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	1.232	6.00	40.13
+ ID2= 2 (0018):	0.97	0.235	6.00	64.50
ID = 1 (0019):	9.84	1.466	6.00	42.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	1.466	6.00	42.53
+ ID2= 2 (0031):	14.59	0.602	6.30	58.16
ID = 3 (0032):	24.43	1.890	6.00	51.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	1.890	6.00	51.87
OUTFLOW: ID= 1 (0022)	24.430	0.560	7.60	51.86

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.64
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.3635

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.831 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 34.223
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.424

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

CALIB
NASHYD (0025)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.253 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 33.581
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.416

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

CALIB
NASHYD (0027)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.181 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 28.173
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.349

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

CALIB
STANDHYD (0024)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	106.66	58.79
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	1.41	0.28 1.695 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00 6.00
RUNOFF VOLUME	(mm)=	79.80	37.31 67.48
TOTAL RAINFALL	(mm)=	80.80	80.80 80.80
RUNOFF COEFFICIENT	=	0.99	0.46 0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0062)

Area (ha)= 0.85

|ID= 1 DT=12.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.24	0.61	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
			TOTALS	
PEAK FLOW	(cms)=	0.07	0.09	0.160 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	49.20
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.831	6.00	34.22
+ ID2= 2 (0024):	6.71	1.695	6.00	67.48
ID = 3 (0028):	16.89	2.526	6.00	47.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.526	6.00	47.43
+ ID2= 2 (0025):	2.59	0.253	6.00	33.58
ID = 1 (0028):	19.48	2.778	6.00	45.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	2.778	6.00	45.59
+ ID2= 2 (0027):	1.61	0.181	6.00	28.17
ID = 3 (0028):	21.09	2.959	6.00	44.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	2.959	6.00	44.26
+ ID2= 2 (0062):	0.85	0.160	6.00	49.20
ID = 1 (0028):	21.94	3.119	6.00	44.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.560	7.60	51.86
+ ID2= 2 (0028):	21.94	3.119	6.00	44.45
ID = 3 (0029):	46.37	3.500	6.00	48.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.500	6.00	48.40
OUTFLOW: ID= 1 (0030)	46.370	0.714	8.20	48.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.39
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.7213

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.02	3.083	3.23	6.083	14.54	9.08	2.83
0.167	2.02	3.167	3.23	6.167	14.54	9.17	2.83
0.250	2.02	3.250	3.23	6.250	14.54	9.25	2.83
0.333	2.02	3.333	3.23	6.333	14.54	9.33	2.83
0.417	2.02	3.417	3.23	6.417	14.54	9.42	2.83
0.500	2.02	3.500	3.23	6.500	14.54	9.50	2.83
0.583	2.02	3.583	3.23	6.583	6.46	9.58	2.83
0.667	2.02	3.667	3.23	6.667	6.46	9.67	2.83
0.750	2.02	3.750	3.23	6.750	6.46	9.75	2.83
0.833	2.02	3.833	3.23	6.833	6.46	9.83	2.83
0.917	2.02	3.917	3.23	6.917	6.46	9.92	2.83
1.000	2.02	4.000	3.23	7.000	6.46	10.00	2.83
1.083	2.02	4.083	4.85	7.083	4.85	10.08	1.62
1.167	2.02	4.167	4.85	7.167	4.85	10.17	1.62
1.250	2.02	4.250	4.85	7.250	4.85	10.25	1.62
1.333	2.02	4.333	4.85	7.333	4.85	10.33	1.62
1.417	2.02	4.417	4.85	7.417	4.85	10.42	1.62
1.500	2.02	4.500	4.85	7.500	4.85	10.50	1.62
1.583	2.02	4.583	6.46	7.583	4.85	10.58	1.62
1.667	2.02	4.667	6.46	7.667	4.85	10.67	1.62
1.750	2.02	4.750	6.46	7.750	4.85	10.75	1.62
1.833	2.02	4.833	6.46	7.833	4.85	10.83	1.62
1.917	2.02	4.917	6.46	7.917	4.85	10.92	1.62
2.000	2.02	5.000	6.46	8.000	4.85	11.00	1.62
2.083	2.42	5.083	9.70	8.083	2.83	11.08	1.62
2.167	2.42	5.167	9.70	8.167	2.83	11.17	1.62
2.250	2.42	5.250	9.70	8.250	2.83	11.25	1.62
2.333	2.42	5.333	9.70	8.333	2.83	11.33	1.62
2.417	2.42	5.417	9.70	8.417	2.83	11.42	1.62
2.500	2.42	5.500	9.70	8.500	2.83	11.50	1.62
2.583	2.42	5.583	38.78	8.583	2.83	11.58	1.62
2.667	2.42	5.667	38.78	8.667	2.83	11.67	1.62
2.750	2.42	5.750	38.79	8.750	2.83	11.75	1.62
2.833	2.42	5.833	106.66	8.833	2.83	11.83	1.62
2.917	2.42	5.917	106.66	8.917	2.83	11.92	1.62
3.000	2.42	6.000	106.65	9.000	2.83	12.00	1.62

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.174 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 34.468
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.427

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

CALIB STANDHYD (0004) ID= 1 DT=12.0 min	Area (ha)= 1.45 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.02	3.200	3.23	6.200	14.54	9.20	2.83
0.400	2.02	3.400	3.23	6.400	14.54	9.40	2.83
0.600	2.02	3.600	3.23	6.600	10.50	9.60	2.83
0.800	2.02	3.800	3.23	6.800	6.46	9.80	2.83
1.000	2.02	4.000	3.23	7.000	6.46	10.00	2.83
1.200	2.02	4.200	4.85	7.200	4.85	10.20	1.62
1.400	2.02	4.400	4.85	7.400	4.85	10.40	1.62
1.600	2.02	4.600	5.66	7.600	4.85	10.60	1.62
1.800	2.02	4.800	6.46	7.800	4.85	10.80	1.62
2.000	2.02	5.000	6.46	8.000	4.85	11.00	1.62
2.200	2.42	5.200	9.70	8.200	2.83	11.20	1.62
2.400	2.42	5.400	9.70	8.400	2.83	11.40	1.62
2.600	2.42	5.600	24.24	8.600	2.83	11.60	1.62
2.800	2.42	5.800	55.75	8.800	2.83	11.80	1.62
3.000	2.42	6.000	106.66	9.000	2.83	12.00	1.62

Max.Eff.Inten.	(mm/hr)=	106.66	58.79	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.27	0.08	0.351 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	64.50
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0063) ID= 1 DT=12.0 min	Area (ha)= 3.62 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.	(mm/hr)=	106.66	58.79	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.30	0.38	0.679 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	49.21
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.351	6.00	64.50
+ ID2= 2 (0005):	1.33	0.174	6.00	34.47
ID = 3 (0007):	2.78	0.525	6.00	50.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.525	6.00	50.37
+ ID2= 2 (0063):	3.62	0.679	6.00	49.21
ID = 1 (0007):	6.40	1.204	6.00	49.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	1.204	6.00	49.91
OUTFLOW: ID= 1 (0033)	6.400	0.091	6.92	49.81

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.56
TIME SHIFT OF PEAK FLOW (min)= 55.00
MAXIMUM STORAGE USED (ha.m.)= 0.2021

ROUTE PIPE (0034) IN= 2---> OUT= 1 DT= 5.0 min		
	PIPE Number	= 1.00
	Diameter	(mm)=1650.00
	Length	(m)= 850.00
	Slope	(m/m)= 0.005
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.09	6.92	49.81	0.13	0.97
OUTFLOW: ID= 1 (0034)	6.40	0.09	7.17	49.81	0.13	0.97

CALIB			
NASHYD (0035)	Area (ha)= 8.03	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.22		

Unit Hyd Qpeak (cms)=	1.394	
PEAK FLOW (cms)=	0.783	(i)
TIME TO PEAK (hrs)=	6.000	
RUNOFF VOLUME (mm)=	33.581	
TOTAL RAINFALL (mm)=	80.800	
RUNOFF COEFFICIENT =	0.416	

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

CALIB			
NASHYD (0037)	Area (ha)= 10.64	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.24		

Unit Hyd Qpeak (cms)=	1.693	
PEAK FLOW (cms)=	0.968	(i)
TIME TO PEAK (hrs)=	6.000	
RUNOFF VOLUME (mm)=	33.908	
TOTAL RAINFALL (mm)=	80.800	
RUNOFF COEFFICIENT =	0.420	

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

CALIB			
NASHYD (0038)	Area (ha)= 2.11	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

Unit Hyd Qpeak (cms)=	0.310	
PEAK FLOW (cms)=	0.179	(i)
TIME TO PEAK (hrs)=	6.000	
RUNOFF VOLUME (mm)=	34.136	
TOTAL RAINFALL (mm)=	80.800	
RUNOFF COEFFICIENT =	0.422	

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

CALIB			
STANDHYD (0036)	Area (ha)= 17.98		
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW (cms)=		3.25	1.02	4.269 (iii)
TIME TO PEAK (hrs)=		6.00	6.00	6.00
RUNOFF VOLUME (mm)=		79.80	37.31	63.23
TOTAL RAINFALL (mm)=		80.80	80.80	80.80
RUNOFF COEFFICIENT =		0.99	0.46	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0039)	Area (ha)= 1.21		
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW (cms)=		0.20	0.08	0.276 (iii)
TIME TO PEAK (hrs)=		6.00	6.00	6.00
RUNOFF VOLUME (mm)=		79.80	37.31	60.68
TOTAL RAINFALL (mm)=		80.80	80.80	80.80
RUNOFF COEFFICIENT =		0.99	0.46	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)					
Inlet Cap.=0.169					
#of Inlets= 1					
Total(cms)= 0.2		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.21	0.28	6.00	60.68
MAJOR SYS.(ID= 2):		0.13	0.11	6.00	60.68
MINOR SYS.(ID= 3):		1.08	0.17	6.00	60.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0047)	Area (ha)= 1.50		
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		106.66	58.79	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW (cms)=		0.28	0.08	0.363 (iii)
TIME TO PEAK (hrs)=		6.00	6.00	6.00
RUNOFF VOLUME (mm)=		79.80	37.31	64.50
TOTAL RAINFALL (mm)=		80.80	80.80	80.80
RUNOFF COEFFICIENT =		0.99	0.46	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)					
Inlet Cap.=0.363					
#of Inlets= 1					
Total(cms)= 0.4		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.50	0.36	6.00	64.50

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     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.50      0.36      6.00   64.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0035):      8.03   0.783     6.00     33.58
       + ID2= 2 (0036):     17.98   4.269     6.00     63.23
         ==============================================
         ID = 3 (0040):     26.01   5.052     6.00     54.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0040):     26.01   5.052     6.00     54.08
       + ID2= 2 (0037):     10.64   0.968     6.00     33.91
         ==============================================
         ID = 1 (0040):     36.65   6.021     6.00     48.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0040):     36.65   6.021     6.00     48.22
       + ID2= 2 (0038):      2.11   0.179     6.00     34.14
         ==============================================
         ID = 3 (0040):     38.76   6.199     6.00     47.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0040):     38.76   6.199     6.00     47.45
       + ID2= 2 (0072):      0.00   0.000     0.00      0.00
         ==============================================
         ID = 1 (0040):     38.76   6.199     6.00     47.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0040):     38.76   6.199     6.00     47.45
       + ID2= 2 (0074):      0.13   0.107     6.00     60.68
         ==============================================
         ID = 3 (0040):     38.89   6.307     6.00     47.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0034):      6.40   0.090     7.17     49.81
       + ID2= 2 (0040):     38.89   6.307     6.00     47.50
         ==============================================
         ID = 3 (0041):     45.29   6.338     6.00     48.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                         0.0000     0.0000     |   3.1150      0.9004
                         1.2740     0.5550     |   3.6250      1.1600
                         2.2650     0.7154     |   3.9640      1.3570

                                  AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0041)      45.287     6.338      6.00      48.05
     OUTFLOW: ID= 1 (0043)      45.287     2.232      6.25      48.05

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 35.21
                TIME SHIFT OF PEAK FLOW         (min)= 15.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.7117

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| CALIB            |
| NASHYD    (0044) |   Area     (ha)=   3.28   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.308 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  21.962
     TOTAL RAINFALL   (mm)=  80.800
     RUNOFF COEFFICIENT    =   0.272

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

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--------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.208 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  33.760
     TOTAL RAINFALL   (mm)=  80.800
     RUNOFF COEFFICIENT    =   0.418

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

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| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
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                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        6.71          3.45
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      106.66         58.79
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.98 (ii)     6.74 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        1.99          0.50       2.489 (iii)
     TIME TO PEAK    (hrs)=        6.00          6.00        6.00
     RUNOFF VOLUME    (mm)=       79.80         37.31       65.35
     TOTAL RAINFALL   (mm)=       80.80         80.80       80.80
     RUNOFF COEFFICIENT    =       0.99          0.46        0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB              |
| STANDHYD  (0059)   |   Area    (ha)=   1.27
|ID= 1 DT=12.0 min   |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.86         0.41
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    106.66        58.79
                over (min)      12.00        12.00
     Storage Coeff.  (min)=      0.98 (ii)    6.74 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=      0.26         0.06          0.315 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     79.80        37.31          66.20
     TOTAL RAINFALL   (mm)=     80.80        80.80          80.80
     RUNOFF COEFFICIENT   =      0.99         0.46           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.31      6.00   66.20
     =====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.27      0.31      6.00   66.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0070)   |   Area    (ha)=   2.50
|ID= 1 DT=12.0 min   |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.38         1.12
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    106.66        58.79
                over (min)      12.00        12.00
     Storage Coeff.  (min)=      0.98 (ii)    6.74 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=      0.41         0.16          0.571 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     79.80        37.31          60.68
     TOTAL RAINFALL   (mm)=     80.80        80.80          80.80
     RUNOFF COEFFICIENT   =      0.99         0.46           0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0071) |
| Inlet Cap.=0.550 |
| #of Inlets=    1 |
| Total(cms)=  0.6 |      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.50      0.57      6.00   60.68
     =====================================================
     MAJOR SYS.(ID= 2):   0.02      0.02      6.00   60.68
     MINOR SYS.(ID= 3):   2.48      0.55      6.00   60.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0044):      3.28    0.308     6.00    21.96
        + ID2= 2 (0045):     10.16    2.489     6.00    65.35
          ===============================================
          ID = 3 (0048):     13.44    2.798     6.00    54.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):     13.44    2.798     6.00    54.76
        + ID2= 2 (0046):      2.21    0.208     6.00    33.76
          ===============================================
          ID = 1 (0048):     15.65    3.006     6.00    51.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):     15.65    3.006     6.00    51.80
        + ID2= 2 (0069):      1.27    0.315     6.00    66.20
          ===============================================
          ID = 3 (0048):     16.92    3.321     6.00    52.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):     16.92    3.321     6.00    52.88
        + ID2= 2 (0071):      2.48    0.550     6.00    60.68
          ===============================================
          ID = 1 (0048):     19.40    3.871     6.00    53.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):     19.40    3.871     6.00    53.87
        + ID2= 2 (0072):      1.50    0.363     6.00    64.50
          ===============================================
          ID = 3 (0048):     20.90    4.234     6.00    54.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |        OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
--------------------         (cms)     (ha.m.)   |    (cms)     (ha.m.)
                             0.0000     0.0000   |   0.9630     0.3823
                             0.5430     0.1233   |   1.3030     0.6907
                             0.7650     0.2343   |   1.5860     1.0977

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0048)      20.895     4.234      6.00      54.64
```

OUTFLOW: ID= 1 (0049) 20.895 1.020 6.20 54.63

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.09
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.4365

ROUTE PIPE (0050)	IN= 2---> OUT= 1	DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.90	1.02	6.20	54.63	0.42	2.34
OUTFLOW: ID= 1 (0050)	20.90	1.02	6.30	54.63	0.42	2.34

CALIB NASHYD (0054) ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.131 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 33.581
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.416

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

CALIB NASHYD (0056) ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 2.994
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.037

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

CALIB NASHYD (0058) ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.205 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 34.223
TOTAL RAINFALL (mm)= 80.800
RUNOFF COEFFICIENT = 0.424

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

CALIB STANDHYD (0057) ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.33	0.14
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	106.66	58.79
over (min)	12.00	12.00
Storage Coeff. (min)=	0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

			TOTALS
PEAK FLOW	(cms)=	0.10	0.02	0.118 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	67.04
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.118	6.00	67.04
+ ID2= 2 (0058):	2.51	0.205	6.00	34.22
ID = 3 (0073):	2.98	0.323	6.00	39.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066) Inlet Cap.=0.181 #of Inlets= 1 Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.32	6.00	39.40
MAJOR SYS.(ID= 2):	0.30	0.14	6.00	39.40
MINOR SYS.(ID= 3):	2.68	0.18	6.00	39.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0053) ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.28	2.58
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	106.66	58.79
over (min)	12.00	12.00
Storage Coeff. (min)=	0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.97	0.38	1.347 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	61.10
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0055) ID= 1 DT=12.0 min | Area (ha)= 2.71 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		106.66	58.79
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.20	0.30	0.496 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	47.93
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0065) ID= 1 DT=12.0 min | Area (ha)= 2.71 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		106.66	58.79
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.20	0.30	0.496 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	79.80	37.31	47.93
TOTAL RAINFALL	(mm)=	80.80	80.80	80.80
RUNOFF COEFFICIENT	=	0.99	0.46	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	1.347	6.00	61.10
+ ID2= 2 (0054):	1.34	0.131	6.00	33.58
ID = 3 (0051):	7.20	1.478	6.00	55.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.478	6.00	55.98
+ ID2= 2 (0055):	2.71	0.496	6.00	47.93
ID = 1 (0051):	9.91	1.974	6.00	53.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.974	6.00	53.78
+ ID2= 2 (0056):	0.10	0.001	6.00	2.99
ID = 3 (0051):	10.01	1.976	6.00	53.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.976	6.00	53.27
+ ID2= 2 (0065):	2.71	0.496	6.00	47.93
ID = 1 (0051):	12.72	2.472	6.00	52.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	2.472	6.00	52.14
+ ID2= 2 (0066):	2.68	0.181	6.00	39.40
ID = 3 (0051):	15.40	2.653	6.00	49.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

*** W A R N I N G : HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	15.40	2.653	6.00	49.92
+ ID2= 2 (0069):	0.00	0.000	0.00	0.00
ID = 1 (0051):	15.40	2.653	6.00	49.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0050):	20.90	1.020	6.30	54.63
+ ID2= 2 (0051):	15.40	2.653	6.00	49.92
ID = 3 (0060):	36.29	3.469	6.00	52.65

ADD HYD (0051) 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.5100	0.3577
	0.2970	0.1233	0.6800	0.7154
	0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.294	3.469	6.00	52.65
OUTFLOW: ID= 1 (0061)	36.294	0.699	8.10	52.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.14
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 0.7948

****
** SIMULATION NUMBER: 6 **
****

READ STORM | Filename: C:\Users\DMcBrayne\AppData\Local\Temp\f2b35c34-fbac-4525-847e-f59c2b644911\873ccf52
Ptotal= 88.50 mm | Comments: 100-Year 12-Hour SCS II Design Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.21	3.25	3.54	6.25	15.93	9.25	3.10
0.50	2.21	3.50	3.54	6.50	15.93	9.50	3.10
0.75	2.21	3.75	3.54	6.75	7.08	9.75	3.10
1.00	2.21	4.00	3.54	7.00	7.08	10.00	3.10
1.25	2.21	4.25	5.31	7.25	5.31	10.25	1.77
1.50	2.21	4.50	5.31	7.50	5.31	10.50	1.77
1.75	2.21	4.75	7.08	7.75	5.31	10.75	1.77
2.00	2.21	5.00	7.08	8.00	5.31	11.00	1.77
2.25	2.65	5.25	10.62	8.25	3.10	11.25	1.77
2.50	2.65	5.50	10.62	8.50	3.10	11.50	1.77
2.75	2.65	5.75	42.48	8.75	3.10	11.75	1.77
3.00	2.65	6.00	116.82	9.00	3.10	12.00	1.77

CALIB NASHYD (0011) ID= 1 DT=12.0 min | Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.21	3.200	3.54	6.200	15.93	9.20	3.10
0.400	2.21	3.400	3.54	6.400	15.93	9.40	3.10
0.600	2.21	3.600	3.54	6.600	11.51	9.60	3.10
0.800	2.21	3.800	3.54	6.800	7.08	9.80	3.10
1.000	2.21	4.000	3.54	7.000	7.08	10.00	3.10
1.200	2.21	4.200	5.31	7.200	5.31	10.20	1.77
1.400	2.21	4.400	5.31	7.400	5.31	10.40	1.77
1.600	2.21	4.600	6.19	7.600	5.31	10.60	1.77
1.800	2.21	4.800	7.08	7.800	5.31	10.80	1.77
2.000	2.21	5.000	7.08	8.000	5.31	11.00	1.77
2.200	2.65	5.200	10.62	8.200	3.10	11.20	1.77
2.400	2.65	5.400	10.62	8.400	3.10	11.40	1.77
2.600	2.65	5.600	26.55	8.600	3.10	11.60	1.77
2.800	2.65	5.800	61.06	8.800	3.10	11.80	1.77
3.000	2.66	6.000	116.82	9.000	3.10	12.00	1.77

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.118 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 36.943
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.417

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

CALIB STANDHYD (0010) ID= 1 DT=12.0 min | Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.77	0.26	1.022 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	70.12
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0012) ID= 1 DT=12.0 min | Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	3.08 (ii)	8.52 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	1.34	0.42	1.765 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	70.12
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0064) ID= 1 DT=12.0 min | Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00

Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.24	0.38	0.614 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	54.08
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	1.022	6.00	70.12
+ ID2= 2 (0011):	0.91	0.118	6.00	36.94
ID = 3 (0013):	4.78	1.140	6.00	63.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	1.140	6.00	63.81
+ ID2= 2 (0012):	6.86	1.765	6.00	70.12
ID = 1 (0013):	11.64	2.905	6.00	67.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	2.905	6.00	67.53
+ ID2= 2 (0064):	2.95	0.614	6.00	54.08
ID = 3 (0013):	14.59	3.519	6.00	64.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	3.519	6.00	64.81
OUTFLOW: ID= 1 (0021)	14.590	0.654	6.30	64.80

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.59
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.4611

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.65	6.30	64.80	0.35	1.93
OUTFLOW: ID= 1 (0031)	14.59	0.66	6.30	64.79	0.35	1.93

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.810 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 37.994
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.429

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.20	0.06	0.261 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	71.46
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00

Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	116.82	67.62
over (min)		12.00	12.00
Storage Coeff. (min)	=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak (min)	=	12.00	12.00
Unit Hyd. peak (cms)	=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)	=	0.42	0.18	0.596 (iii)
TIME TO PEAK	(hrs)	=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)	=	87.50	42.95	67.45
TOTAL RAINFALL	(mm)	=	88.50	88.50	88.50
RUNOFF COEFFICIENT		=	0.99	0.49	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):		6.53	0.810	6.00	37.99
+ ID2= 2 (0017):		2.34	0.596	6.00	67.45
ID = 3 (0019):		8.87	1.406	6.00	45.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):		8.87	1.406	6.00	45.76
+ ID2= 2 (0018):		0.97	0.261	6.00	71.46
ID = 1 (0019):		9.84	1.666	6.00	48.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):		9.84	1.666	6.00	48.30
+ ID2= 2 (0031):		14.59	0.657	6.30	64.79
ID = 3 (0032):		24.43	2.128	6.00	58.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	2.128	6.00	58.15
OUTFLOW: ID= 1 (0022)	24.430	0.611	7.60	58.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 28.69
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4151

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.968 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 39.678
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.448

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

CALIB
NASHYD (0025)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.294 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 38.933
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.440

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

CALIB
NASHYD (0027)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.210 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 32.664
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.369

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

CALIB
STANDHYD (0024)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)	4.76	1.95
Dep. Storage	(mm)	1.00	1.50
Average Slope	(%)	2.00	2.00
Length	(m)	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	116.82	67.62
over (min)		12.00	12.00
Storage Coeff. (min)	=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak (min)	=	12.00	12.00
Unit Hyd. peak (cms)	=	0.14	0.12

					TOTALS
PEAK FLOW	(cms)	=	1.55	0.33	1.876 (iii)
TIME TO PEAK	(hrs)	=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)	=	87.50	42.95	74.58
TOTAL RAINFALL	(mm)	=	88.50	88.50	88.50
RUNOFF COEFFICIENT		=	0.99	0.49	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0062)
ID= 1 DT=12.0 min

Area (ha)= 0.85
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)	0.24	0.61

Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	67.62
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.08	0.10	0.181 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	55.42
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.968	6.00	39.68
+ ID2= 2 (0024):	6.71	1.876	6.00	74.58
ID = 3 (0028):	16.89	2.844	6.00	53.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.844	6.00	53.54
+ ID2= 2 (0025):	2.59	0.294	6.00	38.93
ID = 1 (0028):	19.48	3.137	6.00	51.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	3.137	6.00	51.60
+ ID2= 2 (0027):	1.61	0.210	6.00	32.66
ID = 3 (0028):	21.09	3.347	6.00	50.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	3.347	6.00	50.16
+ ID2= 2 (0062):	0.85	0.181	6.00	55.42
ID = 1 (0028):	21.94	3.528	6.00	50.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.611	7.60	58.14
+ ID2= 2 (0028):	21.94	3.528	6.00	50.36
ID = 3 (0029):	46.37	3.933	6.00	54.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.933	6.00	54.50
OUTFLOW: ID= 1 (0030)	46.370	0.796	8.20	54.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.25
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.8045

CALIB
NASHYD (0005) ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.21	3.083	3.54	6.083	15.93	9.08	3.10
0.167	2.21	3.167	3.54	6.167	15.93	9.17	3.10
0.250	2.21	3.250	3.54	6.250	15.93	9.25	3.10
0.333	2.21	3.333	3.54	6.333	15.93	9.33	3.10
0.417	2.21	3.417	3.54	6.417	15.93	9.42	3.10
0.500	2.21	3.500	3.54	6.500	15.93	9.50	3.10
0.583	2.21	3.583	3.54	6.583	7.08	9.58	3.10
0.667	2.21	3.667	3.54	6.667	7.08	9.67	3.10
0.750	2.21	3.750	3.54	6.750	7.08	9.75	3.10
0.833	2.21	3.833	3.54	6.833	7.08	9.83	3.10
0.917	2.21	3.917	3.54	6.917	7.08	9.92	3.10
1.000	2.21	4.000	3.54	7.000	7.08	10.00	3.10
1.083	2.21	4.083	5.31	7.083	5.31	10.08	1.77
1.167	2.21	4.167	5.31	7.167	5.31	10.17	1.77
1.250	2.21	4.250	5.31	7.250	5.31	10.25	1.77
1.333	2.21	4.333	5.31	7.333	5.31	10.33	1.77
1.417	2.21	4.417	5.31	7.417	5.31	10.42	1.77
1.500	2.21	4.500	5.31	7.500	5.31	10.50	1.77
1.583	2.21	4.583	7.08	7.583	5.31	10.58	1.77
1.667	2.21	4.667	7.08	7.667	5.31	10.67	1.77
1.750	2.21	4.750	7.08	7.750	5.31	10.75	1.77
1.833	2.21	4.833	7.08	7.833	5.31	10.83	1.77
1.917	2.21	4.917	7.08	7.917	5.31	10.92	1.77
2.000	2.21	5.000	7.08	8.000	5.31	11.00	1.77
2.083	2.65	5.083	10.62	8.083	3.10	11.08	1.77
2.167	2.65	5.167	10.62	8.167	3.10	11.17	1.77
2.250	2.65	5.250	10.62	8.250	3.10	11.25	1.77
2.333	2.65	5.333	10.62	8.333	3.10	11.33	1.77
2.417	2.65	5.417	10.62	8.417	3.10	11.42	1.77
2.500	2.65	5.500	10.62	8.500	3.10	11.50	1.77
2.583	2.65	5.583	42.48	8.583	3.10	11.58	1.77
2.667	2.65	5.667	42.48	8.667	3.10	11.67	1.77
2.750	2.65	5.750	42.48	8.750	3.10	11.75	1.77
2.833	2.65	5.833	116.82	8.833	3.10	11.83	1.77
2.917	2.65	5.917	116.82	8.917	3.10	11.92	1.77
3.000	2.65	6.000	116.82	9.000	3.10	12.00	1.77

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.202 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 39.962
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.452

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

CALIB

| STANDHYD (0004) | Area (ha)= 1.45
|ID= 1 DT=12.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.93	0.52
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.21	3.200	3.54	6.200	15.93	9.20	3.10
0.400	2.21	3.400	3.54	6.400	15.93	9.40	3.10
0.600	2.21	3.600	3.54	6.600	11.51	9.60	3.10
0.800	2.21	3.800	3.54	6.800	7.08	9.80	3.10
1.000	2.21	4.000	3.54	7.000	7.08	10.00	3.10
1.200	2.21	4.200	5.31	7.200	5.31	10.20	1.77
1.400	2.21	4.400	5.31	7.400	5.31	10.40	1.77
1.600	2.21	4.600	6.19	7.600	5.31	10.60	1.77
1.800	2.21	4.800	7.08	7.800	5.31	10.80	1.77
2.000	2.21	5.000	7.08	8.000	5.31	11.00	1.77
2.200	2.65	5.200	10.62	8.200	3.10	11.20	1.77
2.400	2.65	5.400	10.62	8.400	3.10	11.40	1.77
2.600	2.65	5.600	26.55	8.600	3.10	11.60	1.77
2.800	2.65	5.800	61.06	8.800	3.10	11.80	1.77
3.000	2.66	6.000	116.82	9.000	3.10	12.00	1.77

			TOTALS
Max.Eff.Inten.(mm/hr)=	116.82	67.62	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.95 (ii)	6.39 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
PEAK FLOW (cms)=	0.30	0.09	0.390 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	87.50	42.95	71.46
TOTAL RAINFALL (mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT =	0.99	0.49	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

| CALIB
| STANDHYD (0063) | Area (ha)= 3.62
|ID= 1 DT=12.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.01	2.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

			TOTALS
Max.Eff.Inten.(mm/hr)=	116.82	67.62	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.95 (ii)	6.39 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
PEAK FLOW (cms)=	0.33	0.44	0.771 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	87.50	42.95	55.42
TOTAL RAINFALL (mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT =	0.99	0.49	0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0007) |
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.390	6.00	71.46
+ ID2= 2 (0005):	1.33	0.202	6.00	39.96
ID = 3 (0007):	2.78	0.591	6.00	56.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0007) |
| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.591	6.00	56.65
+ ID2= 2 (0063):	3.62	0.771	6.00	55.42
ID = 1 (0007):	6.40	1.362	6.00	56.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| RESERVOIR (0033) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	1.362	6.00	56.18
OUTFLOW: ID= 1 (0033)	6.400	0.108	6.83	56.09

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.94
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.2264

| ROUTE PIPE (0034) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.11	6.83	56.09	0.14	1.04
OUTFLOW: ID= 1 (0034)	6.40	0.11	7.08	56.08	0.14	1.03

| CALIB
| NASHYD (0035) | Area (ha)= 8.03 Curve Number (CN)= 74.0
|ID= 1 DT=12.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

```
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   1.394

     PEAK FLOW       (cms)=   0.910 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  38.933
     TOTAL RAINFALL   (mm)=  88.500
     RUNOFF COEFFICIENT   =   0.440

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

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| NASHYD    (0037)|   Area     (ha)=  10.64   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

     Unit Hyd Qpeak  (cms)=   1.693

     PEAK FLOW       (cms)=   1.127 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  39.313
     TOTAL RAINFALL   (mm)=  88.500
     RUNOFF COEFFICIENT   =   0.444

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

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-------------------
| CALIB           |
| NASHYD    (0038)|   Area     (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.208 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  39.577
     TOTAL RAINFALL   (mm)=  88.500
     RUNOFF COEFFICIENT   =   0.447

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

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-------------------
| CALIB           |
| STANDHYD  (0036)|   Area     (ha)=  17.98
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.97         7.01
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        67.62
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    6.39 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      3.56         1.19        4.748 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00         6.00
     RUNOFF VOLUME    (mm)=     87.50        42.95        70.12
     TOTAL RAINFALL   (mm)=     88.50        88.50        88.50
     RUNOFF COEFFICIENT   =      0.99         0.49         0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0039)|   Area     (ha)=   1.21
|ID= 1 DT=12.0 min|   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.67         0.54
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        67.62
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    6.39 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.22         0.09        0.308 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00         6.00
     RUNOFF VOLUME    (mm)=     87.50        42.95        67.45
     TOTAL RAINFALL   (mm)=     88.50        88.50        88.50
     RUNOFF COEFFICIENT   =      0.99         0.49         0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0074)|
| Inlet Cap.=0.169|
| #of Inlets=    1|
| Total(cms)=  0.2|       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.21      0.31      6.00   67.45
     ==========================================================
     MAJOR SYS.(ID= 2):   0.15      0.14      6.00   67.45
     MINOR SYS.(ID= 3):   1.06      0.17      6.00   67.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0047)|   Area     (ha)=   1.50
|ID= 1 DT=12.0 min|   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.96         0.54
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        67.62
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    6.39 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.31         0.09        0.403 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00         6.00
     RUNOFF VOLUME    (mm)=     87.50        42.95        71.46
     TOTAL RAINFALL   (mm)=     88.50        88.50        88.50
     RUNOFF COEFFICIENT   =      0.99         0.49         0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0072)|
| Inlet Cap.=0.363|
| #of Inlets=    1|
| Total(cms)=  0.4|       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.50      0.40      6.00   71.46
     ==========================================================
     MAJOR SYS.(ID= 2):   0.04      0.04      6.00   71.46
     MINOR SYS.(ID= 3):   1.46      0.36      6.00   71.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 | ADD HYD   (0040) |
 |  1 + 2 = 3       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0035):       8.03    0.910     6.00    38.93
        + ID2= 2 (0036):      17.98    4.748     6.00    70.12
          ==================================================
          ID = 3 (0040):      26.01    5.658     6.00    60.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | ADD HYD   (0040) |
 |  3 + 2 = 1       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):      26.01    5.658     6.00    60.49
        + ID2= 2 (0037):      10.64    1.127     6.00    39.31
          ==================================================
          ID = 1 (0040):      36.65    6.785     6.00    54.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | ADD HYD   (0040) |
 |  1 + 2 = 3       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):      36.65    6.785     6.00    54.35
        + ID2= 2 (0038):       2.11    0.208     6.00    39.58
          ==================================================
          ID = 3 (0040):      38.76    6.993     6.00    53.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | ADD HYD   (0040) |
 |  3 + 2 = 1       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):      38.76    6.993     6.00    53.54
        + ID2= 2 (0072):       0.04    0.040     6.00    71.46
          ==================================================
          ID = 1 (0040):      38.80    7.033     6.00    53.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | ADD HYD   (0040) |
 |  1 + 2 = 3       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):      38.80    7.033     6.00    53.56
        + ID2= 2 (0074):       0.15    0.139     6.00    67.45
          ==================================================
          ID = 3 (0040):      38.95    7.172     6.00    53.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | ADD HYD   (0041) |
 |  1 + 2 = 3       |          AREA    QPEAK    TPEAK     R.V.
 --------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):       6.40    0.107     7.08    56.08
        + ID2= 2 (0040):      38.95    7.172     6.00    53.61
          ==================================================
          ID = 3 (0041):      45.35    7.208     6.00    54.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 --------------------
 | RESERVOIR (0043) |
 | IN= 2---> OUT= 1 |
 | DT=  5.0 min     |       OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
 --------------------        (cms)     (ha.m.)   |    (cms)     (ha.m.)
                             0.0000     0.0000   |   3.1150      0.9004
                             1.2740     0.5550   |   3.6250      1.1600
                             2.2650     0.7154   |   3.9640      1.3570

                                          AREA     QPEAK     TPEAK       R.V.
                                          (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0041)               45.349     7.208      6.00      54.22
     OUTFLOW: ID= 1 (0043)               45.349     2.610      6.25      54.22

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 36.21
                   TIME SHIFT OF PEAK FLOW         (min)= 15.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.7934

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 --------------------
 | CALIB            |
 | NASHYD    (0044) |    Area    (ha)=   3.28   Curve Number   (CN)= 74.0
 |ID= 1 DT=12.0 min |    Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
 --------------------    U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW      (cms)=   0.357 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  25.463
     TOTAL RAINFALL   (mm)=  88.500
     RUNOFF COEFFICIENT   =   0.288

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

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 --------------------
 | CALIB            |
 | NASHYD    (0046) |    Area    (ha)=   2.21   Curve Number   (CN)= 74.0
 |ID= 1 DT=12.0 min |    Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
 --------------------    U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW      (cms)=   0.242 (i)
     TIME TO PEAK    (hrs)=   6.000
     RUNOFF VOLUME    (mm)=  39.141
     TOTAL RAINFALL   (mm)=  88.500
     RUNOFF COEFFICIENT   =   0.442

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

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 --------------------
 | CALIB            |
 | STANDHYD  (0045) |    Area    (ha)=  10.16
 |ID= 1 DT=12.0 min |    Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
 --------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=       6.71         3.45
     Dep. Storage      (mm)=       1.00         1.50
     Average Slope      (%)=       2.00         2.00
     Length             (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        67.62
                over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.95 (ii)     6.39 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                          *TOTALS*
     PEAK FLOW      (cms)=       2.18         0.59          2.761 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=      87.50        42.95          72.35
     TOTAL RAINFALL   (mm)=      88.50        88.50          88.50
     RUNOFF COEFFICIENT   =       0.99         0.49           0.82

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 --------------------
 | CALIB            |
 | STANDHYD  (0059) |    Area    (ha)=   1.27
 |ID= 1 DT=12.0 min |    Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
 --------------------
                              IMPERVIOUS    PERVIOUS (i)
```

Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		116.82	67.62	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.28	0.07	0.349 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	73.24
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)
Inlet Cap.=0.320
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.35	6.00	73.24
MAJOR SYS.(ID= 2):	0.03	0.03	6.00	73.24
MINOR SYS.(ID= 3):	1.24	0.32	6.00	73.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0070)
ID= 1 DT=12.0 min
Area (ha)= 2.50
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	67.62
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.45	0.19	0.637 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	87.50	42.95	67.45
TOTAL RAINFALL	(mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT	=	0.99	0.49	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)
Inlet Cap.=0.550
#of Inlets= 1
Total(cms)= 0.6

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.64	6.00	67.45
MAJOR SYS.(ID= 2):	0.09	0.09	6.00	67.45
MINOR SYS.(ID= 3):	2.41	0.55	6.00	67.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0044):	3.28	0.357	6.00	25.46
+ ID2= 2 (0045):	10.16	2.761	6.00	72.35
ID = 3 (0048):	13.44	3.119	6.00	60.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	13.44	3.119	6.00	60.91
+ ID2= 2 (0046):	2.21	0.242	6.00	39.14
ID = 1 (0048):	15.65	3.361	6.00	57.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	15.65	3.361	6.00	57.83
+ ID2= 2 (0069):	1.24	0.320	6.00	73.24
ID = 3 (0048):	16.89	3.681	6.00	58.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	16.89	3.681	6.00	58.97
+ ID2= 2 (0071):	2.41	0.550	6.00	67.45
ID = 1 (0048):	19.30	4.231	6.00	60.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0048):	19.30	4.231	6.00	60.02
+ ID2= 2 (0072):	1.46	0.363	6.00	71.46
ID = 3 (0048):	20.76	4.594	6.00	60.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.9630	0.3823
0.5430	0.1233	1.3030	0.6907
0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.758	4.594	6.00	60.83
OUTFLOW: ID= 1 (0049)	20.758	1.074	6.20	60.83

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.37
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.4845

ROUTE PIPE (0050)	IN= 2---> OUT= 1	DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<--pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.76	1.07	6.20	60.83	0.43	2.39
OUTFLOW: ID= 1 (0050)	20.76	1.08	6.30	60.83	0.43	2.38

CALIB	NASHYD (0054)	ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.152 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 38.933
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.440

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

CALIB	NASHYD (0056)	ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.002 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 3.471
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.039

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

CALIB	NASHYD (0058)	ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.239 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 39.678
TOTAL RAINFALL (mm)= 88.500
RUNOFF COEFFICIENT = 0.448

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

CALIB	STANDHYD (0057)	ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.11 0.02 0.131 (iii)
TIME TO PEAK	(hrs)=	6.00 6.00 6.00
RUNOFF VOLUME	(mm)=	87.50 42.95 74.12
TOTAL RAINFALL	(mm)=	88.50 88.50 88.50
RUNOFF COEFFICIENT	=	0.99 0.49 0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)	1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):		0.47	0.131	6.00	74.12
+ ID2= 2 (0058):		2.51	0.239	6.00	39.68
ID = 3 (0073):		2.98	0.369	6.00	45.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)	Inlet Cap.=0.181	#of Inlets= 1	Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.37	6.00	45.11
MAJOR SYS.(ID= 2):	0.39	0.19	6.00	45.11
MINOR SYS.(ID= 3):	2.59	0.18	6.00	45.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (0053)	ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	67.62
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	6.39 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.06 0.44 1.502 (iii)
TIME TO PEAK	(hrs)=	6.00 6.00 6.00
RUNOFF VOLUME	(mm)=	87.50 42.95 67.90
TOTAL RAINFALL	(mm)=	88.50 88.50 88.50
RUNOFF COEFFICIENT	=	0.99 0.49 0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0055) ID= 1 DT=12.0 min	Area (ha)= 2.71 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.68	2.03	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	116.82	67.62	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.95 (ii)	6.39 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	0.22	0.34	0.564 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	87.50	42.95	54.08
TOTAL RAINFALL (mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT =	0.99	0.49	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0065) ID= 1 DT=12.0 min	Area (ha)= 2.71 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00		
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.68	2.03	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	116.82	67.62	
over (min)	12.00	12.00	
Storage Coeff. (min)=	0.95 (ii)	6.39 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.12	
			TOTALS
PEAK FLOW (cms)=	0.22	0.34	0.564 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	87.50	42.95	54.08
TOTAL RAINFALL (mm)=	88.50	88.50	88.50
RUNOFF COEFFICIENT =	0.99	0.49	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	1.502	6.00	67.90
+ ID2= 2 (0054):	1.34	0.152	6.00	38.93
ID = 3 (0051):	7.20	1.654	6.00	62.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.654	6.00	62.51
+ ID2= 2 (0055):	2.71	0.564	6.00	54.08
ID = 1 (0051):	9.91	2.218	6.00	60.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	2.218	6.00	60.20
+ ID2= 2 (0056):	0.10	0.002	6.00	3.47
ID = 3 (0051):	10.01	2.220	6.00	59.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	2.220	6.00	59.64
+ ID2= 2 (0065):	2.71	0.564	6.00	54.08
ID = 1 (0051):	12.72	2.784	6.00	58.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	2.784	6.00	58.45
+ ID2= 2 (0066):	2.59	0.181	6.00	45.11
ID = 3 (0051):	15.31	2.965	6.00	56.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	15.31	2.965	6.00	56.19
+ ID2= 2 (0069):	0.03	0.029	6.00	73.24
ID = 1 (0051):	15.34	2.994	6.00	56.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0050):	20.76	1.075	6.30	60.83
+ ID2= 2 (0051):	15.34	2.994	6.00	56.23
ID = 3 (0060):	36.10	3.858	6.00	58.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5100	0.3577

```
                          0.2970     0.1233   |   0.6800      0.7154
                          0.4250     0.2220   |   0.7930      1.1964

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0060)     36.100     3.858      6.00      58.89
     OUTFLOW: ID= 1 (0061)     36.100     0.725      8.20      58.88

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 18.78
                    TIME SHIFT OF PEAK FLOW          (min)=132.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.9052

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 FINISH
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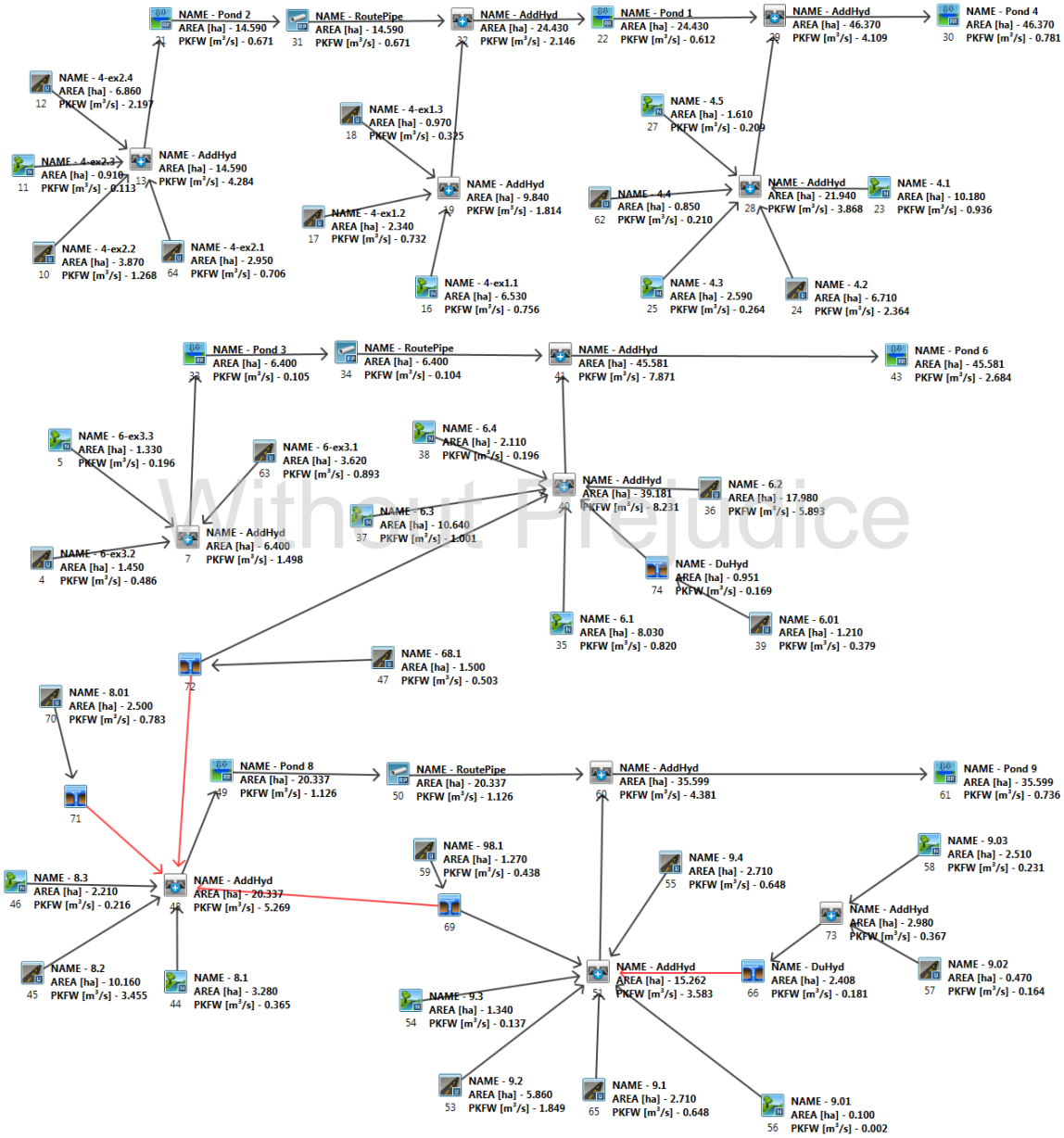
L09-301
Glenway Golf Course Development, Newmarket, ON
4 Hour Chicago Storm Pre-Development Model Schematic
July 2013

VO2 Model Schematic



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==========================================================================================
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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\8b85d6c4-f183-44da-bac0-
ea2c676881e9\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\8b85d6c4-f183-44da-bac0-
ea2c676881e9\Scenario.sum


DATE: 07/26/2013                          TIME: 02:09:41

USER:


COMMENTS: _____

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  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************

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| CHICAGO STORM   |    IDF curve parameters: A= 648.000
| Ptotal= 34.82 mm|                          B=   4.000
-------------------                          C=   0.784
                       used in:   INTENSITY =  A / (t + B)^C

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

   TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
    hrs    mm/hr |   hrs    mm/hr | '   hrs    mm/hr |   hrs    mm/hr
   0.17    2.27  |  1.17   17.18  |  2.17    5.25  |  3.17    2.69
   0.33    2.60  |  1.33   81.85  |  2.33    4.49  |  3.33    2.50
   0.50    3.04  |  1.50   22.51  |  2.50    3.93  |  3.50    2.34
   0.67    3.72  |  1.67   11.87  |  2.67    3.51  |  3.67    2.21
   0.83    4.86  |  1.83    8.23  |  2.83    3.18  |  3.83    2.08
   1.00    7.30  |  2.00    6.38  |  3.00    2.91  |  4.00    1.98


------------------------------------------------------------------------------
-------------------
| CALIB           |
| NASHYD    (0011)|    Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|    Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------    U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
    hrs    mm/hr |   hrs    mm/hr | '   hrs    mm/hr |   hrs    mm/hr
  0.200    2.33  | 1.200   27.96  | 2.200    5.12  |  3.20    2.66
  0.400    2.75  | 1.400   62.07  | 2.400    4.30  |  3.40    2.45
  0.600    3.38  | 1.600   17.19  | 2.600    3.72  |  3.60    2.28
  0.800    4.48  | 1.800    9.44  | 2.800    3.29  |  3.80    2.12
  1.000    6.89  | 2.000    6.69  | 3.000    2.96  |  4.00    1.99

    Unit Hyd Qpeak  (cms)=   0.204

    PEAK FLOW       (cms)=   0.020 (i)
    TIME TO PEAK    (hrs)=   1.400
    RUNOFF VOLUME    (mm)=   6.834
    TOTAL RAINFALL   (mm)=  34.816
    RUNOFF COEFFICIENT   =   0.196

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

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-------------------
| CALIB           |
| STANDHYD  (0010)|    Area     (ha)=   3.87
|ID= 1 DT=12.0 min|    Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=      2.36          1.51
    Dep. Storage     (mm)=      1.00          1.50
    Average Slope     (%)=      2.00          2.00
    Length            (m)=     30.00         20.00
    Mannings n            =     0.013         0.250

    Max.Eff.Inten.(mm/hr)=     62.07         15.76
              over (min)       12.00         12.00
    Storage Coeff.  (min)=      1.22 (ii)    10.97 (ii)
    Unit Hyd. Tpeak (min)=     12.00         12.00
    Unit Hyd. peak  (cms)=      0.14          0.09
                                                        *TOTALS*
    PEAK FLOW       (cms)=      0.41          0.05        0.454 (iii)
    TIME TO PEAK    (hrs)=      1.40          1.40         1.40
    RUNOFF VOLUME    (mm)=     33.82          9.06        24.16
    TOTAL RAINFALL   (mm)=     34.82         34.82        34.82
    RUNOFF COEFFICIENT   =      0.97          0.26         0.69

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0012)|    Area     (ha)=   6.86
|ID= 1 DT=12.0 min|    Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=      4.18          2.68
    Dep. Storage     (mm)=      1.00          1.50
    Average Slope     (%)=      2.00          2.00
    Length            (m)=    213.85         20.00
    Mannings n            =     0.013         0.250

    Max.Eff.Inten.(mm/hr)=     62.07         15.76
              over (min)       12.00         24.00
    Storage Coeff.  (min)=      3.96 (ii)    13.71 (ii)
    Unit Hyd. Tpeak (min)=     12.00         24.00
    Unit Hyd. peak  (cms)=      0.13          0.06
                                                        *TOTALS*
    PEAK FLOW       (cms)=      0.70          0.07        0.739 (iii)
    TIME TO PEAK    (hrs)=      1.40          1.60         1.40
    RUNOFF VOLUME    (mm)=     33.82          9.06        24.16
    TOTAL RAINFALL   (mm)=     34.82         34.82        34.82
    RUNOFF COEFFICIENT   =      0.97          0.26         0.69

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0064)|    Area     (ha)=   2.95
|ID= 1 DT=12.0 min|    Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=      0.74          2.21
    Dep. Storage     (mm)=      1.00          1.50
    Average Slope     (%)=      2.00          2.00
    Length            (m)=     30.00         20.00
    Mannings n            =     0.013         0.250
```

Max.Eff.Inten.(mm/hr)=	62.07	15.76		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.22 (ii)	10.97 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.09		
			TOTALS	
PEAK FLOW (cms)=	0.13	0.07	0.196 (iii)	
TIME TO PEAK (hrs)=	1.40	1.40	1.40	
RUNOFF VOLUME (mm)=	33.82	9.06	15.24	
TOTAL RAINFALL (mm)=	34.82	34.82	34.82	
RUNOFF COEFFICIENT =	0.97	0.26	0.44	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.454	1.40	24.16
+ ID2= 2 (0011):	0.91	0.020	1.40	6.83
ID = 3 (0013):	4.78	0.474	1.40	20.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	0.474	1.40	20.86
+ ID2= 2 (0012):	6.86	0.739	1.40	24.16
ID = 1 (0013):	11.64	1.213	1.40	22.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	1.213	1.40	22.80
+ ID2= 2 (0064):	2.95	0.196	1.40	15.24
ID = 3 (0013):	14.59	1.409	1.40	21.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	1.409	1.40	21.28
OUTFLOW: ID= 1 (0021)	14.590	0.275	1.90	21.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.51
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1740

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.27	1.90	21.26	0.23	1.45
OUTFLOW: ID= 1 (0031)	14.59	0.27	1.90	21.26	0.23	1.45

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)=	6.53	Curve Number (CN)=	74.0
Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.19		

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.134 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 7.029
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.202

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		62.07	15.76
over (min)		12.00	12.00
Storage Coeff. (min)=		1.22 (ii)	10.97 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.09

			TOTALS
PEAK FLOW (cms)=	0.11	0.01	0.118 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	33.82	9.06	24.90
TOTAL RAINFALL (mm)=	34.82	34.82	34.82
RUNOFF COEFFICIENT =	0.97	0.26	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	1.29	1.05	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	62.07	15.76	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.22 (ii)	10.97 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.09	
				TOTALS
PEAK FLOW	(cms)=	0.22	0.03	0.255 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	33.82	9.06	22.67
TOTAL RAINFALL	(mm)=	34.82	34.82	34.82
RUNOFF COEFFICIENT	=	0.97	0.26	0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.134	1.40	7.03
+ ID2= 2 (0017):	2.34	0.255	1.40	22.67
ID = 3 (0019):	8.87	0.388	1.40	11.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	0.388	1.40	11.16
+ ID2= 2 (0018):	0.97	0.118	1.40	24.90
ID = 1 (0019):	9.84	0.506	1.40	12.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	0.506	1.40	12.51
+ ID2= 2 (0031):	14.59	0.274	1.90	21.26
ID = 3 (0032):	24.43	0.576	1.40	17.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	0.576	1.40	17.74
OUTFLOW: ID= 1 (0022)	24.430	0.260	2.80	17.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 45.13
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.1289

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.180 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 7.340
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.211

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

CALIB
NASHYD (0025)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.048 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 7.202
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.207

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

CALIB
NASHYD (0027)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.038 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 6.042
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.174

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

CALIB
STANDHYD (0024)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.76	1.95	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	62.07	15.76	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.22 (ii)	10.97 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.09	
				TOTALS
PEAK FLOW	(cms)=	0.82	0.06	0.882 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	33.82	9.06	26.63
TOTAL RAINFALL	(mm)=	34.82	34.82	34.82
RUNOFF COEFFICIENT	=	0.97	0.26	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0062)

Area (ha)= 0.85

|ID= 1 DT=12.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.24	0.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	62.07	15.76
over (min)	12.00	12.00
Storage Coeff. (min)=	1.22 (ii)	10.97 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.09

	TOTALS
PEAK FLOW (cms)=	0.060 (iii)
TIME TO PEAK (hrs)=	1.40
RUNOFF VOLUME (mm)=	15.98
TOTAL RAINFALL (mm)=	34.82
RUNOFF COEFFICIENT =	0.46

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0023):	10.18	0.180	1.60	7.34
	+ ID2= 2 (0024):	6.71	0.882	1.40	26.63
	ID = 3 (0028):	16.89	1.022	1.40	15.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0028):	16.89	1.022	1.40	15.01
	+ ID2= 2 (0025):	2.59	0.048	1.60	7.20
	ID = 1 (0028):	19.48	1.069	1.40	13.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0028):	19.48	1.069	1.40	13.97
	+ ID2= 2 (0027):	1.61	0.038	1.40	6.04
	ID = 3 (0028):	21.09	1.107	1.40	13.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0028):	21.09	1.107	1.40	13.36
	+ ID2= 2 (0062):	0.85	0.060	1.40	15.98
	ID = 1 (0028):	21.94	1.167	1.40	13.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	ID1= 1 (0022):	24.43	0.260	2.80	17.73
	+ ID2= 2 (0028):	21.94	1.167	1.40	13.46
	ID = 3 (0029):	46.37	1.219	1.40	15.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	1.3030	1.3940
DT= 5.0 min	0.4380	0.4440	1.5000	1.8008
	0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	1.219	1.40	15.71
OUTFLOW: ID= 1 (0030)	46.370	0.272	4.00	15.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.31
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.2758

CALIB NASHYD (0005) ID= 1 DT= 5.0 min				
	Area (ha)=	1.33	Curve Number (CN)=	74.0
	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.13		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.27	1.083	17.18	2.083	5.25	3.08	2.69
0.167	2.27	1.167	17.18	2.167	5.25	3.17	2.69
0.250	2.60	1.250	81.85	2.250	4.49	3.25	2.50
0.333	2.60	1.333	81.85	2.333	4.49	3.33	2.50
0.417	3.04	1.417	22.51	2.417	3.93	3.42	2.34
0.500	3.04	1.500	22.51	2.500	3.93	3.50	2.34
0.583	3.72	1.583	11.87	2.583	3.51	3.58	2.21
0.667	3.72	1.667	11.87	2.667	3.51	3.67	2.21
0.750	4.86	1.750	8.23	2.750	3.18	3.75	2.08
0.833	4.86	1.833	8.23	2.833	3.18	3.83	2.08
0.917	7.30	1.917	6.38	2.917	2.91	3.92	1.98
1.000	7.30	2.000	6.38	3.000	2.91	4.00	1.98

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.036 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 7.393
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.212

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

CALIB STANDHYD (0004) ID= 1 DT=12.0 min				
	Area (ha)=	1.45		
	Total Imp(%)=	64.00	Dir. Conn.(%)=	64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.93	0.52
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.33	1.200	27.96	2.200	5.12	3.20	2.66
0.400	2.75	1.400	62.07	2.400	4.30	3.40	2.45
0.600	3.38	1.600	17.19	2.600	3.72	3.60	2.28
0.800	4.48	1.800	9.44	2.800	3.29	3.80	2.12

```
                1.000    6.89 | 2.000    6.69 | 3.000    2.96 |  4.00    1.99

     Max.Eff.Inten.(mm/hr)=      62.07        15.76
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.22 (ii)   10.97 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.16         0.02      0.176 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=      33.82         9.06      24.90
     TOTAL RAINFALL   (mm)=      34.82        34.82      34.82
     RUNOFF COEFFICIENT   =       0.97         0.26       0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0063) |   Area    (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.01         2.61
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =    0.013        0.250

     Max.Eff.Inten.(mm/hr)=      62.07        15.76
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.22 (ii)   10.97 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.17         0.08      0.256 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=      33.82         9.06      15.99
     TOTAL RAINFALL   (mm)=      34.82        34.82      34.82
     RUNOFF COEFFICIENT   =       0.97         0.26       0.46

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0007) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
          ID1= 1 (0004):     1.45   0.176     1.40    24.90
        + ID2= 2 (0005):     1.33   0.036     1.42     7.39
          ================================================
          ID = 3 (0007):     2.78   0.202     1.42    16.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0007) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
          ID1= 3 (0007):     2.78   0.202     1.42    16.52
        + ID2= 2 (0063):     3.62   0.256     1.40    15.99
          ================================================
          ID = 1 (0007):     6.40   0.445     1.42    16.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0033) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------          (cms)     (ha.m.)  |    (cms)     (ha.m.)
                              0.0000     0.0000  |   0.3260     0.8017
                              0.0790     0.1850  |   0.3960     0.9004
                              0.2270     0.3947  |   0.0000     0.0000

                                   AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0007)        6.400     0.445      1.42      16.22
     OUTFLOW: ID= 1 (0033)        6.400     0.032      3.00      16.12

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.23
                TIME SHIFT OF PEAK FLOW          (min)= 95.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.0753

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--------------------
| ROUTE PIPE (0034)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 850.00
--------------------     Slope       (m/m)=  0.005
                         Manning n         =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)        min
        0.09    .367E+02        0.0          0.80        17.68
        0.17    .102E+03        0.1          1.25        11.33
        0.26    .184E+03        0.3          1.61         8.81
        0.35    .278E+03        0.6          1.91         7.41
        0.43    .382E+03        1.0          2.18         6.51
        0.52    .492E+03        1.4          2.41         5.88
        0.61    .608E+03        1.9          2.61         5.43
        0.69    .727E+03        2.4          2.79         5.08
        0.78    .848E+03        2.9          2.95         4.81
        0.87    .970E+03        3.5          3.08         4.60
        0.96    .109E+04        4.1          3.20         4.43
        1.04    .121E+04        4.7          3.29         4.31
        1.13    .133E+04        5.2          3.36         4.22
        1.22    .144E+04        5.8          3.41         4.15
        1.30    .154E+04        6.2          3.44         4.12
        1.39    .163E+04        6.6          3.43         4.13
        1.48    .172E+04        6.9          3.40         4.17
        1.56    .178E+04        6.9          3.31         4.28
        1.65    .182E+04        6.5          3.02         4.70
                                          <---- hydrograph ---->  <-pipe / channel->
                                   AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                                   (ha)    (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0033)        6.40     0.03     3.00  16.12       0.08      0.80
     OUTFLOW: ID= 1 (0034)        6.40     0.03     3.42  16.12       0.08      0.80

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--------------------
| CALIB            |
| NASHYD    (0035) |   Area     (ha)=   8.03   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   1.394

     PEAK FLOW       (cms)=   0.150 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   7.202
     TOTAL RAINFALL   (mm)=  34.816
     RUNOFF COEFFICIENT   =   0.207

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

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--------------------
| CALIB            |
| NASHYD    (0037) |   Area     (ha)=  10.64   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.24

     Unit Hyd Qpeak  (cms)=   1.693

     PEAK FLOW       (cms)=   0.196 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   7.273
     TOTAL RAINFALL   (mm)=  34.816
     RUNOFF COEFFICIENT   =   0.209

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

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| CALIB              |
| NASHYD    (0038)   |   Area     (ha)=   2.11   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.038 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   7.321
     TOTAL RAINFALL   (mm)=  34.816
     RUNOFF COEFFICIENT   =   0.210

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

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--------------------
| CALIB              |
| STANDHYD  (0036)   |   Area     (ha)=  17.98
|ID= 1 DT=12.0 min   |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.97        7.01
     Dep. Storage     (mm)=      1.00        1.50
     Average Slope     (%)=      2.00        2.00
     Length            (m)=     30.00       20.00
     Mannings n           =     0.013       0.250

     Max.Eff.Inten.(mm/hr)=     62.07       15.76
               over (min)       12.00       12.00
     Storage Coeff.  (min)=      1.22 (ii)  10.97 (ii)
     Unit Hyd. Tpeak (min)=     12.00       12.00
     Unit Hyd. peak  (cms)=      0.14        0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=      1.89        0.22          2.109 (iii)
     TIME TO PEAK    (hrs)=      1.40        1.40           1.40
     RUNOFF VOLUME    (mm)=     33.82        9.06          24.16
     TOTAL RAINFALL   (mm)=     34.82       34.82          34.82
     RUNOFF COEFFICIENT   =      0.97        0.26           0.69

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0039)   |   Area     (ha)=   1.21
|ID= 1 DT=12.0 min   |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.67        0.54
     Dep. Storage     (mm)=      1.00        1.50
     Average Slope     (%)=      2.00        2.00
     Length            (m)=     30.00       20.00
     Mannings n           =     0.013       0.250

     Max.Eff.Inten.(mm/hr)=     62.07       15.76
               over (min)       12.00       12.00
     Storage Coeff.  (min)=      1.22 (ii)  10.97 (ii)
     Unit Hyd. Tpeak (min)=     12.00       12.00
     Unit Hyd. peak  (cms)=      0.14        0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.11        0.02          0.132 (iii)
     TIME TO PEAK    (hrs)=      1.40        1.40           1.40
     RUNOFF VOLUME    (mm)=     33.82        9.06          22.67
     TOTAL RAINFALL   (mm)=     34.82       34.82          34.82
     RUNOFF COEFFICIENT   =      0.97        0.26           0.65

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0074)   |
| Inlet Cap.=0.169   |
| #of Inlets=    1   |
| Total(cms)=  0.2   |      AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.21      0.13      1.40    22.67
     =================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.21      0.13      1.40    22.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0047)   |   Area     (ha)=   1.50
|ID= 1 DT=12.0 min   |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.96        0.54
     Dep. Storage     (mm)=      1.00        1.50
     Average Slope     (%)=      2.00        2.00
     Length            (m)=     30.00       20.00
     Mannings n           =     0.013       0.250

     Max.Eff.Inten.(mm/hr)=     62.07       15.76
               over (min)       12.00       12.00
     Storage Coeff.  (min)=      1.22 (ii)  10.97 (ii)
     Unit Hyd. Tpeak (min)=     12.00       12.00
     Unit Hyd. peak  (cms)=      0.14        0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.17        0.02          0.182 (iii)
     TIME TO PEAK    (hrs)=      1.40        1.40           1.40
     RUNOFF VOLUME    (mm)=     33.82        9.06          24.90
     TOTAL RAINFALL   (mm)=     34.82       34.82          34.82
     RUNOFF COEFFICIENT   =      0.97        0.26           0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0072)   |
| Inlet Cap.=0.363   |
| #of Inlets=    1   |
| Total(cms)=  0.4   |      AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.50      0.18      1.40    24.90
     =================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.50      0.18      1.40    24.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|   1 +  2 =  3      |          AREA    QPEAK    TPEAK      R.V.
--------------------            (ha)    (cms)    (hrs)      (mm)
          ID1= 1 (0035):       8.03    0.150     1.60      7.20
        + ID2= 2 (0036):      17.98    2.109     1.40     24.16
          ===============================================
          ID = 3 (0040):      26.01    2.252     1.40     18.92

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|   3 +  2 =  1      |          AREA    QPEAK    TPEAK      R.V.
--------------------            (ha)    (cms)    (hrs)      (mm)
          ID1= 3 (0040):      26.01    2.252     1.40     18.92
        + ID2= 2 (0037):      10.64    0.196     1.60      7.27
          ===============================================
          ID = 1 (0040):      36.65    2.424     1.40     15.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):     36.65   2.424     1.40    15.54
        + ID2= 2 (0038):      2.11   0.038     1.60     7.32
          ================================================
          ID = 3 (0040):     38.76   2.454     1.40    15.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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```
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0040):     38.76   2.454     1.40    15.09
        + ID2= 2 (0072):      0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0040):     38.76   2.454     1.40    15.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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```
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0074 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0040):     38.76   2.454     1.40    15.09
        + ID2= 2 (0074):      0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0040):     38.76   2.454     1.40    15.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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```
| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):      6.40   0.032     3.42    16.12
        + ID2= 2 (0040):     38.76   2.454     1.40    15.09
          ================================================
          ID = 3 (0041):     45.16   2.345     1.42    15.24

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

```
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   3.1150      0.9004
                          1.2740     0.5550    |   3.6250      1.1600
                          2.2650     0.7154    |   3.9640      1.3570

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0041)     45.160     2.345     1.42       15.24
     OUTFLOW: ID= 1 (0043)     45.160     0.627     1.83       15.24

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 26.74
                    TIME SHIFT OF PEAK FLOW          (min)= 25.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.2736
```

```
| CALIB            |
| NASHYD    (0044) |   Area     (ha)=   3.28   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.067 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   4.711
     TOTAL RAINFALL   (mm)=  34.816
     RUNOFF COEFFICIENT   =   0.135

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.041 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   7.241
     TOTAL RAINFALL   (mm)=  34.816
     RUNOFF COEFFICIENT   =   0.208

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        6.71          3.45
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       62.07         15.76
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.22 (ii)    10.97 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.09
                                                              *TOTALS*
     PEAK FLOW       (cms)=        1.16          0.11          1.263 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=       33.82          9.06         25.40
     TOTAL RAINFALL   (mm)=       34.82         34.82         34.82
     RUNOFF COEFFICIENT   =        0.97          0.26          0.73

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.
```

```
| CALIB            |
| STANDHYD  (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.86          0.41
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       62.07         15.76
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.22 (ii)    10.97 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.09
                                                              *TOTALS*
     PEAK FLOW       (cms)=        0.15          0.01          0.162 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=       33.82          9.06         25.89
     TOTAL RAINFALL   (mm)=       34.82         34.82         34.82
     RUNOFF COEFFICIENT   =        0.97          0.26          0.74

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

DUHYD (0069)					
Inlet Cap.=0.320					
#of Inlets= 1					
Total(cms)= 0.3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	TOTAL HYD.(ID= 1):	1.27	0.16	1.40	25.89
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	1.27	0.16	1.40	25.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0070)	Area (ha)= 2.50			
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00		
		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.38	1.12	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	62.07	15.76	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.22 (ii)	10.97 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.09	
				TOTALS
PEAK FLOW	(cms)=	0.24	0.03	0.272 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	33.82	9.06	22.67
TOTAL RAINFALL	(mm)=	34.82	34.82	34.82
RUNOFF COEFFICIENT	=	0.97	0.26	0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)					
Inlet Cap.=0.550					
#of Inlets= 1					
Total(cms)= 0.6		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	TOTAL HYD.(ID= 1):	2.50	0.27	1.40	22.67
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	2.50	0.27	1.40	22.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0044):	3.28	0.067	1.40	4.71
	+ ID2= 2 (0045):	10.16	1.263	1.40	25.40
	ID = 3 (0048):	13.44	1.330	1.40	20.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0048):	13.44	1.330	1.40	20.35
	+ ID2= 2 (0046):	2.21	0.041	1.60	7.24
	ID = 1 (0048):	15.65	1.368	1.40	18.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0048):	15.65	1.368	1.40	18.50
	+ ID2= 2 (0069):	1.27	0.162	1.40	25.89
	ID = 3 (0048):	16.92	1.529	1.40	19.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0048):	16.92	1.529	1.40	19.05
	+ ID2= 2 (0071):	2.50	0.272	1.40	22.67
	ID = 1 (0048):	19.42	1.801	1.40	19.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0048):	19.42	1.801	1.40	19.52
	+ ID2= 2 (0072):	1.50	0.182	1.40	24.90
	ID = 3 (0048):	20.92	1.984	1.40	19.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.9630	0.3823
	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)		20.920	1.984	1.40	19.90
OUTFLOW: ID= 1 (0049)		20.920	0.640	1.60	19.90
	PEAK FLOW REDUCTION [Qout/Qin](%)=		32.28		
	TIME SHIFT OF PEAK FLOW (min)=		12.00		
	MAXIMUM STORAGE USED (ha.m.)=		0.1724		

ROUTE PIPE (0050)		
IN= 2---> OUT= 1	PIPE Number	= 1.00
DT= 5.0 min	Diameter (mm)=	1650.00
	Length (m)=	467.00
	Slope (m/m)=	0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08

1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.64	1.60	19.90	0.33	2.04
OUTFLOW: ID= 1 (0050)	20.92	0.64	1.70	19.90	0.33	2.04

CALIB
NASHYD (0054)
ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.025 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 7.202
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.207

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

CALIB
NASHYD (0056)
ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.000 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 0.642
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.018

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

CALIB
NASHYD (0058)
ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.044 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 7.340
TOTAL RAINFALL (mm)= 34.816
RUNOFF COEFFICIENT = 0.211

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

CALIB
STANDHYD (0057)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		62.07	15.76
over (min)		12.00	12.00
Storage Coeff. (min)=		1.22 (ii)	10.97 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.09

		TOTALS
PEAK FLOW	(cms)=	0.06 0.00 0.061 (iii)
TIME TO PEAK	(hrs)=	1.40 1.40 1.40
RUNOFF VOLUME	(mm)=	33.82 9.06 26.38
TOTAL RAINFALL	(mm)=	34.82 34.82 34.82
RUNOFF COEFFICIENT	=	0.97 0.26 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.061	1.40	26.38
+ ID2= 2 (0058):	2.51	0.044	1.60	7.34
ID = 3 (0073):	2.98	0.096	1.40	10.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)
Inlet Cap.=0.181
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.10	1.40	10.34
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.10	1.40	10.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053)
ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		62.07	15.76
over (min)		12.00	12.00
Storage Coeff. (min)=		1.22 (ii)	10.97 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.09

		TOTALS
PEAK FLOW	(cms)=	0.57 0.08 0.646 (iii)
TIME TO PEAK	(hrs)=	1.40 1.40 1.40
RUNOFF VOLUME	(mm)=	33.82 9.06 22.92
TOTAL RAINFALL	(mm)=	34.82 34.82 34.82
RUNOFF COEFFICIENT	=	0.97 0.26 0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0055)
ID= 1 DT=12.0 min

Area (ha)= 2.71
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		62.07	15.76
over (min)		12.00	12.00
Storage Coeff. (min)=		1.22 (ii)	10.97 (ii)

```
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.12         0.06          0.180 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      33.82         9.06          15.24
     TOTAL RAINFALL   (mm)=      34.82        34.82          34.82
     RUNOFF COEFFICIENT   =       0.97         0.26           0.44

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0065)  |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n             =    0.013        0.250

     Max.Eff.Inten.(mm/hr)=      62.07        15.76
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.22 (ii)   10.97 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.12         0.06          0.180 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      33.82         9.06          15.24
     TOTAL RAINFALL   (mm)=      34.82        34.82          34.82
     RUNOFF COEFFICIENT   =       0.97         0.26           0.44

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0053):      5.86    0.646     1.40    22.92
       + ID2= 2 (0054):      1.34    0.025     1.60     7.20
         ==========================================================
         ID = 3 (0051):      7.20    0.670     1.40    19.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0051):      7.20    0.670     1.40    19.99
       + ID2= 2 (0055):      2.71    0.180     1.40    15.24
         ==========================================================
         ID = 1 (0051):      9.91    0.850     1.40    18.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0051):      9.91    0.850     1.40    18.70
       + ID2= 2 (0056):      0.10    0.000     1.40     0.64
         ==========================================================
         ID = 3 (0051):     10.01    0.850     1.40    18.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0051):     10.01    0.850     1.40    18.52
       + ID2= 2 (0065):      2.71    0.180     1.40    15.24
         ==========================================================
         ID = 1 (0051):     12.72    1.030     1.40    17.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0051):     12.72    1.030     1.40    17.82
       + ID2= 2 (0066):      2.98    0.096     1.40    10.34
         ==========================================================
         ID = 3 (0051):     15.70    1.126     1.40    16.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0051):     15.70    1.126     1.40    16.40
       + ID2= 2 (0069):      0.00    0.000     0.00     0.00
         ==========================================================
         ID = 1 (0051):     15.70    1.126     1.40    16.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0050):     20.92    0.643     1.70    19.90
       + ID2= 2 (0051):     15.70    1.126     1.40    16.40
         ==========================================================
         ID = 3 (0060):     36.62    1.542     1.40    18.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)   |    (cms)     (ha.m.)
                         0.0000      0.0000   |   0.5100      0.3577
                         0.2970      0.1233   |   0.6800      0.7154
                         0.4250      0.2220   |   0.7930      1.1964

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0060)     36.620     1.542      1.40      18.40
     OUTFLOW: ID= 1 (0061)     36.620     0.465      2.70      18.40

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 30.18
                TIME SHIFT OF PEAK FLOW          (min)= 78.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.2869

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  ****************************
  ** SIMULATION NUMBER:   2 **
  ****************************

-------------------
| CHICAGO STORM    |    IDF curve parameters: A= 930.000
| Ptotal= 46.27 mm |                          B=   4.000
-------------------                          C=   0.798
```

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	2.85	1.17	22.78	2.17	6.72	3.17	3.39
0.33	3.26	1.33	113.21	2.33	5.72	3.33	3.14
0.50	3.84	1.50	30.05	2.50	4.99	3.50	2.94
0.67	4.72	1.67	15.54	2.67	4.45	3.67	2.76
0.83	6.21	1.83	10.66	2.83	4.02	3.83	2.61
1.00	9.42	2.00	8.20	3.00	3.67	4.00	2.47

CALIB
NASHYD (0011)
ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.92	1.200	37.85	2.200	6.55	3.20	3.35
0.400	3.45	1.400	85.49	2.400	5.48	3.40	3.08
0.600	4.28	1.600	22.80	2.600	4.72	3.60	2.85
0.800	5.71	1.800	12.29	2.800	4.16	3.80	2.66
1.000	8.88	2.000	8.61	3.000	3.73	4.00	2.49

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.039 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 11.943
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.258

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

CALIB
STANDHYD (0010)
ID= 1 DT=12.0 min

Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	85.49	27.73
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.651 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	33.44
TOTAL RAINFALL	(mm)=	46.27
RUNOFF COEFFICIENT	=	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0012)
ID= 1 DT=12.0 min

Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	85.49	27.73
over	(min)	12.00	12.00
Storage Coeff.	(min)=	3.49 (ii)	11.26 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.09

		TOTALS
PEAK FLOW	(cms)=	1.120 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	33.44
TOTAL RAINFALL	(mm)=	46.27
RUNOFF COEFFICIENT	=	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0064)
ID= 1 DT=12.0 min

Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	85.49	27.73
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.308 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	22.53
TOTAL RAINFALL	(mm)=	46.27
RUNOFF COEFFICIENT	=	0.49

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):		3.87	0.651	1.40	33.44
+ ID2= 2 (0011):		0.91	0.039	1.40	11.94
ID = 3 (0013):		4.78	0.690	1.40	29.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):		4.78	0.690	1.40	29.35
+ ID2= 2 (0012):		6.86	1.120	1.40	33.44
ID = 1 (0013):		11.64	1.811	1.40	31.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0013) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	1.811	1.40	31.76
+ ID2= 2 (0064):	2.95	0.308	1.40	22.53
ID = 3 (0013):	14.59	2.119	1.40	29.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| RESERVOIR (0021) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |
-------------------
```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	2.119	1.40	29.90
OUTFLOW: ID= 1 (0021)	14.590	0.403	1.80	29.88

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.04
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.2451

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-------------------
| ROUTE PIPE (0031)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |
-------------------
```

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<--pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.40	1.80	29.88	0.28	1.66
OUTFLOW: ID= 1 (0031)	14.59	0.40	1.90	29.88	0.28	1.66

```
-------------------
| CALIB            |
| NASHYD    (0016) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.260 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 12.283
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.265

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

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-------------------
| CALIB            |
| STANDHYD  (0018) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.62	0.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	85.49	27.73
over (min)	12.00	12.00
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.11

		TOTALS
PEAK FLOW (cms)=	0.15	0.02	0.168 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	45.27	14.95	34.35
TOTAL RAINFALL (mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT =	0.98	0.32	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0017) |
|ID= 1 DT=12.0 min |
-------------------
```

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.29	1.05
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	85.49	27.73
over (min)	12.00	12.00
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.11

		TOTALS
PEAK FLOW (cms)=	0.31	0.06	0.369 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	45.27	14.95	31.62
TOTAL RAINFALL (mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT =	0.98	0.32	0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0019) |
|   1 +  2 =  3    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.260	1.40	12.28
+ ID2= 2 (0017):	2.34	0.369	1.40	31.62
ID = 3 (0019):	8.87	0.629	1.40	17.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0019) |
|   3 +  2 =  1    |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	0.629	1.40	17.39
+ ID2= 2 (0018):	0.97	0.168	1.40	34.35

```
          ID = 1 (0019):     9.84   0.798     1.40     19.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0032) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):     9.84   0.798     1.40     19.06
        + ID2= 2 (0031):    14.59   0.403     1.90     29.88
          ================================================
          ID = 3 (0032):    24.43   0.923     1.40     25.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0022) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.6510     0.4564
                         0.1220     0.0863     |   0.8770     0.7894
                         0.3620     0.1603     |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0032)    24.430     0.923     1.40       25.52
     OUTFLOW: ID= 1 (0022)    24.430     0.387     2.80       25.51

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 41.96
                TIME SHIFT OF PEAK FLOW          (min)= 84.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.1863

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

-------------------
| CALIB            |
| NASHYD    (0023) |   Area     (ha)=  10.18   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   1.440

     PEAK FLOW       (cms)=   0.339 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  12.827
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.277

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

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-------------------
| CALIB            |
| NASHYD    (0025) |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.090 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  12.586
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.272

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

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-------------------
| CALIB            |
| NASHYD    (0027) |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.073 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  10.559
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.228

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

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-------------------
| CALIB            |
| STANDHYD  (0024) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------

                                  IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=           4.76          1.95
     Dep. Storage     (mm)=           1.00          1.50
     Average Slope     (%)=           2.00          2.00
     Length            (m)=          30.00         20.00
     Mannings n           =          0.013         0.250

     Max.Eff.Inten.(mm/hr)=          85.49         27.73
               over (min)            12.00         12.00
     Storage Coeff.  (min)=           1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=          12.00         12.00
     Unit Hyd. peak  (cms)=           0.14          0.11
                                                              *TOTALS*
     PEAK FLOW       (cms)=           1.13          0.12       1.248 (iii)
     TIME TO PEAK    (hrs)=           1.40          1.40        1.40
     RUNOFF VOLUME    (mm)=          45.27         14.95       36.48
     TOTAL RAINFALL   (mm)=          46.27         46.27       46.27
     RUNOFF COEFFICIENT   =           0.98          0.32        0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0062) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
-------------------

                                  IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=           0.24          0.61
     Dep. Storage     (mm)=           1.00          1.50
     Average Slope     (%)=           2.00          2.00
     Length            (m)=          30.00         20.00
     Mannings n           =          0.013         0.250

     Max.Eff.Inten.(mm/hr)=          85.49         27.73
               over (min)            12.00         12.00
     Storage Coeff.  (min)=           1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=          12.00         12.00
     Unit Hyd. peak  (cms)=           0.14          0.11
                                                              *TOTALS*
     PEAK FLOW       (cms)=           0.06          0.04       0.093 (iii)
     TIME TO PEAK    (hrs)=           1.40          1.40        1.40
     RUNOFF VOLUME    (mm)=          45.27         14.95       23.44
     TOTAL RAINFALL   (mm)=          46.27         46.27       46.27
     RUNOFF COEFFICIENT   =           0.98          0.32        0.51

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0023):    10.18   0.339     1.60     12.83
        + ID2= 2 (0024):     6.71   1.248     1.40     36.48
          ================================================
          ID = 3 (0028):    16.89   1.526     1.40     22.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0028) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
```

ID1= 3 (0028):	16.89	1.526	1.40	22.22
+ ID2= 2 (0025):	2.59	0.090	1.40	12.59
ID = 1 (0028):	19.48	1.616	1.40	20.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	1.616	1.40	20.94
+ ID2= 2 (0027):	1.61	0.073	1.40	10.56
ID = 3 (0028):	21.09	1.689	1.40	20.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	1.689	1.40	20.15
+ ID2= 2 (0062):	0.85	0.093	1.40	23.44
ID = 1 (0028):	21.94	1.783	1.40	20.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.387	2.80	25.51
+ ID2= 2 (0028):	21.94	1.783	1.40	20.28
ID = 3 (0029):	46.37	1.863	1.40	23.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	1.863	1.40	23.04
OUTFLOW: ID= 1 (0030)	46.370	0.422	4.00	23.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.67
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.4283

CALIB NASHYD (0005) ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.85	1.083	22.78	2.083	6.72	3.08	3.39
0.167	2.85	1.167	22.78	2.167	6.72	3.17	3.39
0.250	3.26	1.250	113.21	2.250	5.72	3.25	3.14
0.333	3.26	1.333	113.21	2.333	5.72	3.33	3.14
0.417	3.84	1.417	30.05	2.417	4.99	3.42	2.94
0.500	3.84	1.500	30.05	2.500	4.99	3.50	2.94
0.583	4.72	1.583	15.54	2.583	4.45	3.58	2.76
0.667	4.72	1.667	15.54	2.667	4.45	3.67	2.76
0.750	6.21	1.750	10.66	2.750	4.02	3.75	2.61
0.833	6.21	1.833	10.66	2.833	4.02	3.83	2.61
0.917	9.42	1.917	8.20	2.917	3.67	3.92	2.47
1.000	9.42	2.000	8.20	3.000	3.67	4.00	2.47

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.068 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 12.919
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.279

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

CALIB STANDHYD (0004) ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.93	0.52
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.92	1.200	37.85	2.200	6.55	3.20	3.35
0.400	3.45	1.400	85.49	2.400	5.48	3.40	3.08
0.600	4.28	1.600	22.80	2.600	4.72	3.60	2.85
0.800	5.71	1.800	12.29	2.800	4.16	3.80	2.66
1.000	8.88	2.000	8.61	3.000	3.73	4.00	2.49

			TOTALS
Max.Eff.Inten.(mm/hr)=	85.49	27.73	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
PEAK FLOW (cms)=	0.22	0.03	0.252 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	45.27	14.95	34.35
TOTAL RAINFALL (mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT =	0.98	0.32	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0063) ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.01	2.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

			TOTALS
Max.Eff.Inten.(mm/hr)=	85.49	27.73	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
PEAK FLOW (cms)=	0.24	0.16	0.398 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	45.27	14.95	23.44
TOTAL RAINFALL (mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT =	0.98	0.32	0.51

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

```
      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

ADD HYD (0007)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0004):	1.45	0.252	1.40	34.35
	+ ID2= 2 (0005):	1.33	0.068	1.42	12.92
	ID = 3 (0007):	2.78	0.306	1.42	24.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0007):	2.78	0.306	1.42	24.09
	+ ID2= 2 (0063):	3.62	0.398	1.40	23.44
	ID = 1 (0007):	6.40	0.683	1.42	23.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.683	1.42	23.72
OUTFLOW: ID= 1 (0033)	6.400	0.047	2.92	23.63

```
PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.92
TIME SHIFT OF PEAK FLOW          (min)= 90.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.1108
```

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

```
PIPE Number      =   1.00
Diameter    (mm)=1650.00
Length       (m)= 850.00
Slope      (m/m)=  0.005
Manning n        =  0.013
```

<-------------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.05	2.92	23.63	0.10	0.83
OUTFLOW: ID= 1 (0034)	6.40	0.05	3.25	23.63	0.10	0.83

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

```
Area     (ha)=   8.03   Curve Number   (CN)= 74.0
Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)=   0.22

Unit Hyd Qpeak  (cms)=   1.394

PEAK FLOW       (cms)=   0.280 (i)
TIME TO PEAK    (hrs)=   1.400
RUNOFF VOLUME    (mm)=  12.586
TOTAL RAINFALL   (mm)=  46.267
RUNOFF COEFFICIENT   =   0.272
```

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

```
Area     (ha)=  10.64   Curve Number   (CN)= 74.0
Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)=   0.24

Unit Hyd Qpeak  (cms)=   1.693

PEAK FLOW       (cms)=   0.366 (i)
TIME TO PEAK    (hrs)=   1.600
RUNOFF VOLUME    (mm)=  12.709
TOTAL RAINFALL   (mm)=  46.267
RUNOFF COEFFICIENT   =   0.275
```

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

```
Area     (ha)=   2.11   Curve Number   (CN)= 74.0
Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)=   0.26

Unit Hyd Qpeak  (cms)=   0.310

PEAK FLOW       (cms)=   0.071 (i)
TIME TO PEAK    (hrs)=   1.600
RUNOFF VOLUME    (mm)=  12.794
TOTAL RAINFALL   (mm)=  46.267
RUNOFF COEFFICIENT   =   0.277
```

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

```
Area     (ha)=  17.98
Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
```

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	85.49	27.73	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	2.60	0.42	3.026 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	33.44
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.72

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

```
      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0039)   |   Area    (ha)=   1.21
|ID= 1 DT=12.0 min   |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=       0.67          0.54
     Dep. Storage      (mm)=       1.00          1.50
     Average Slope      (%)=       2.00          2.00
     Length             (m)=      30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      85.49         27.73
                over (min)       12.00         12.00
     Storage Coeff.   (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak  (min)=     12.00         12.00
     Unit Hyd. peak   (cms)=      0.14          0.11
                                                              *TOTALS*
     PEAK FLOW        (cms)=      0.16          0.03            0.191 (iii)
     TIME TO PEAK     (hrs)=      1.40          1.40             1.40
     RUNOFF VOLUME     (mm)=     45.27         14.95            31.62
     TOTAL RAINFALL    (mm)=     46.27         46.27            46.27
     RUNOFF COEFFICIENT   =       0.98          0.32             0.68

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (0074)   |
| Inlet Cap.=0.169   |
| #of Inlets=    1   |
| Total(cms)=  0.2   |       AREA     QPEAK     TPEAK    R.V.
--------------------        (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.21      0.19      1.40   31.62
     ==================================================
     MAJOR SYS.(ID= 2):   0.05      0.02      1.40   31.62
     MINOR SYS.(ID= 3):   1.16      0.17      1.40   31.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0047)   |   Area    (ha)=   1.50
|ID= 1 DT=12.0 min   |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=       0.96          0.54
     Dep. Storage      (mm)=       1.00          1.50
     Average Slope      (%)=       2.00          2.00
     Length             (m)=      30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      85.49         27.73
                over (min)       12.00         12.00
     Storage Coeff.   (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak  (min)=     12.00         12.00
     Unit Hyd. peak   (cms)=      0.14          0.11
                                                              *TOTALS*
     PEAK FLOW        (cms)=      0.23          0.03            0.260 (iii)
     TIME TO PEAK     (hrs)=      1.40          1.40             1.40
     RUNOFF VOLUME     (mm)=     45.27         14.95            34.35
     TOTAL RAINFALL    (mm)=     46.27         46.27            46.27
     RUNOFF COEFFICIENT   =       0.98          0.32             0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD     (0072)   |
| Inlet Cap.=0.363   |
| #of Inlets=    1   |
```

```
| Total(cms)=  0.4   |       AREA     QPEAK     TPEAK    R.V.
--------------------        (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.50      0.26      1.40   34.35
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.50      0.26      1.40   34.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|  1 +  2 =  3       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0035):      8.03    0.280     1.40    12.59
        + ID2= 2 (0036):     17.98    3.026     1.40    33.44
          ==============================================
          ID = 3 (0040):     26.01    3.307     1.40    27.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|  3 +  2 =  1       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):     26.01    3.307     1.40    27.01
        + ID2= 2 (0037):     10.64    0.366     1.60    12.71
          ==============================================
          ID = 1 (0040):     36.65    3.644     1.40    22.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|  1 +  2 =  3       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):     36.65    3.644     1.40    22.85
        + ID2= 2 (0038):      2.11    0.071     1.60    12.79
          ==============================================
          ID = 3 (0040):     38.76    3.704     1.40    22.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|  3 +  2 =  1       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0040):     38.76    3.704     1.40    22.31
        + ID2= 2 (0072):      0.00    0.000     0.00     0.00
          ==============================================
          ID = 1 (0040):     38.76    3.704     1.40    22.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0040)   |
|  1 +  2 =  3       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):     38.76    3.704     1.40    22.31
        + ID2= 2 (0074):      0.05    0.022     1.40    31.62
          ==============================================
          ID = 3 (0040):     38.81    3.726     1.40    22.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0041)   |
|  1 +  2 =  3       |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):      6.40    0.047     3.25    23.63
        + ID2= 2 (0040):     38.81    3.726     1.40    22.32
          ==============================================
```

```
     ID = 3 (0041):    45.21   3.563     1.42    22.51

 NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)     |    (cms)     (ha.m.)
                          0.0000     0.0000     |   3.1150     0.9004
                          1.2740     0.5550     |   3.6250     1.1600
                          2.2650     0.7154     |   3.9640     1.3570

                               AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
 INFLOW : ID= 2 (0041)     45.210     3.563      1.42      22.51
 OUTFLOW: ID= 1 (0043)     45.210     0.946      1.83      22.50

              PEAK   FLOW   REDUCTION [Qout/Qin](%)= 26.55
              TIME SHIFT OF PEAK FLOW         (min)= 25.00
              MAXIMUM  STORAGE   USED        (ha.m.)=  0.4131

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-------------------
| CALIB           |
| NASHYD    (0044)|   Area    (ha)=   3.28   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.128 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   8.232
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.178

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

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| NASHYD    (0046)|   Area    (ha)=   2.21   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.076 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  12.653
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.273

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

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| CALIB           |
| STANDHYD  (0045)|   Area    (ha)=  10.16
|ID= 1 DT=12.0 min|   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      6.71         3.45
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
                   over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      1.59         0.21      1.800 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95      34.96
     TOTAL RAINFALL   (mm)=     46.27        46.27      46.27
     RUNOFF COEFFICIENT   =      0.98         0.32       0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0059)|   Area    (ha)=   1.27
|ID= 1 DT=12.0 min|   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.86         0.41
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
                   over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.21         0.02      0.230 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95      35.56
     TOTAL RAINFALL   (mm)=     46.27        46.27      46.27
     RUNOFF COEFFICIENT   =      0.98         0.32       0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0069)|
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):    1.27      0.23      1.40    35.56
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):    1.27      0.23      1.40    35.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0070)|   Area    (ha)=   2.50
|ID= 1 DT=12.0 min|   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.38         1.12
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
                   over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.33         0.07      0.394 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95      31.62
     TOTAL RAINFALL   (mm)=     46.27        46.27      46.27
     RUNOFF COEFFICIENT   =      0.98         0.32       0.68

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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DUHYD (0071)					
Inlet Cap.=0.550					
#of Inlets= 1					
Total(cms)= 0.6	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
TOTAL HYD.(ID= 1):	2.50	0.39	1.40	31.62	
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00	
MINOR SYS.(ID= 3):	2.50	0.39	1.40	31.62	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0044):	3.28	0.128	1.40	8.23	
+ ID2= 2 (0045):	10.16	1.800	1.40	34.96	
ID = 3 (0048):	13.44	1.929	1.40	28.44	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0048):	13.44	1.929	1.40	28.44	
+ ID2= 2 (0046):	2.21	0.076	1.60	12.65	
ID = 1 (0048):	15.65	2.002	1.40	26.21	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0048):	15.65	2.002	1.40	26.21	
+ ID2= 2 (0069):	1.27	0.230	1.40	35.56	
ID = 3 (0048):	16.92	2.232	1.40	26.91	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0048):	16.92	2.232	1.40	26.91	
+ ID2= 2 (0071):	2.50	0.394	1.40	31.62	
ID = 1 (0048):	19.42	2.626	1.40	27.52	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0048):	19.42	2.626	1.40	27.52	
+ ID2= 2 (0072):	1.50	0.260	1.40	34.35	
ID = 3 (0048):	20.92	2.886	1.40	28.01	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.9630	0.3823
	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.920	2.886	1.40	28.01
OUTFLOW: ID= 1 (0049)	20.920	0.798	1.70	28.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.66
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.2601

ROUTE PIPE (0050)		
IN= 2---> OUT= 1	PIPE Number	= 1.00
DT= 5.0 min	Diameter (mm)	=1650.00
	Length (m)	= 467.00
	Slope (m/m)	= 0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.92	0.80	1.70	28.00	0.37	2.17
OUTFLOW: ID= 1 (0050)	20.92	0.80	1.70	28.00	0.37	2.17

CALIB				
NASHYD (0054)	Area (ha)=	1.34	Curve Number (CN)=	74.0
ID= 1 DT=12.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.22		

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.047 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 12.586
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.272

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

CALIB				
NASHYD (0056)	Area (ha)=	0.10	Curve Number (CN)=	74.0
ID= 1 DT=12.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.05		

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 1.122
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.024

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

CALIB				
NASHYD (0058)	Area (ha)=	2.51	Curve Number (CN)=	74.0
ID= 1 DT=12.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00

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--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.355

     PEAK FLOW       (cms)=   0.083 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  12.827
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.277

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

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| CALIB            |
| STANDHYD  (0057) |   Area     (ha)=   0.47
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.33          0.14
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=     85.49         27.73
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.08          0.01          0.087 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=     45.27         14.95         36.17
     TOTAL RAINFALL   (mm)=     46.27         46.27         46.27
     RUNOFF COEFFICIENT   =      0.98          0.32          0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0073) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0057):     0.47   0.087     1.40    36.17
       + ID2= 2 (0058):     2.51   0.083     1.60    12.83
         ==========================================================
         ID = 3 (0073):     2.98   0.155     1.40    16.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| DUHYD     (0066) |
| Inlet Cap.=0.181 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK     R.V.
--------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):    2.98      0.15      1.40    16.51
     ==========================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):    2.98      0.15      1.40    16.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0053) |   Area     (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      3.28          2.58
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=     85.49         27.73
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.78          0.16          0.934 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=     45.27         14.95         31.93
     TOTAL RAINFALL   (mm)=     46.27         46.27         46.27
     RUNOFF COEFFICIENT   =      0.98          0.32          0.69

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0055) |   Area     (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.68          2.03
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=     85.49         27.73
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.16          0.12          0.283 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=     45.27         14.95         22.53
     TOTAL RAINFALL   (mm)=     46.27         46.27         46.27
     RUNOFF COEFFICIENT   =      0.98          0.32          0.49

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0065) |   Area     (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.68          2.03
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=     85.49         27.73
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.16          0.12          0.283 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=     45.27         14.95         22.53
     TOTAL RAINFALL   (mm)=     46.27         46.27         46.27
     RUNOFF COEFFICIENT   =      0.98          0.32          0.49

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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ADD HYD (0051) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	0.934	1.40	31.93
+ ID2= 2 (0054):	1.34	0.047	1.40	12.59
ID = 3 (0051):	7.20	0.981	1.40	28.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	0.981	1.40	28.33
+ ID2= 2 (0055):	2.71	0.283	1.40	22.53
ID = 1 (0051):	9.91	1.264	1.40	26.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.264	1.40	26.74
+ ID2= 2 (0056):	0.10	0.001	1.40	1.12
ID = 3 (0051):	10.01	1.265	1.40	26.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.265	1.40	26.49
+ ID2= 2 (0065):	2.71	0.283	1.40	22.53
ID = 1 (0051):	12.72	1.548	1.40	25.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	1.548	1.40	25.64
+ ID2= 2 (0066):	2.98	0.155	1.40	16.51
ID = 3 (0051):	15.70	1.703	1.40	23.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

*** W A R N I N G : HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003

ID1= 3 (0051):	15.70	1.703	1.40	23.91
+ ID2= 2 (0069):	0.00	0.000	0.00	0.00
ID = 1 (0051):	15.70	1.703	1.40	23.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0050):	20.92	0.800	1.70	28.00
+ ID2= 2 (0051):	15.70	1.703	1.40	23.91
ID = 3 (0060):	36.62	2.251	1.40	26.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5100	0.3577
0.2970	0.1233	0.6800	0.7154
0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.620	2.251	1.40	26.25
OUTFLOW: ID= 1 (0061)	36.620	0.554	3.00	26.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.61
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4502

****
** SIMULATION NUMBER: 3 **
****

CHICAGO STORM
Ptotal= 54.13 mm

IDF curve parameters: A=1021.000
B= 3.000
C= 0.787
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	3.43	1.17	25.32	2.17	7.85	3.17	4.06
0.33	3.92	1.33	135.63	2.33	6.73	3.33	3.78
0.50	4.59	1.50	33.17	2.50	5.91	3.50	3.54
0.67	5.59	1.67	17.50	2.67	5.29	3.67	3.33
0.83	7.28	1.83	12.21	2.83	4.79	3.83	3.15
1.00	10.84	2.00	9.50	3.00	4.39	4.00	2.99

CALIB
NASHYD (0011)
ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	3.52	1.200	43.70	2.200	7.66	3.20	4.02
0.400	4.14	1.400	101.48	2.400	6.45	3.40	3.70
0.600	5.09	1.600	25.33	2.600	5.60	3.60	3.44
0.800	6.72	1.800	13.97	2.800	4.96	3.80	3.21
1.000	10.25	2.000	9.95	3.000	4.46	4.00	3.02

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.054 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 15.968
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.295

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

CALIB
STANDHYD (0010)
ID= 1 DT=12.0 min

Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	101.48	37.18
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.67	0.13 0.793 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	53.13	19.53 40.03
TOTAL RAINFALL	(mm)=	54.13	54.13 54.13
RUNOFF COEFFICIENT	=	0.98	0.36 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0012)
ID= 1 DT=12.0 min

Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	101.48	37.18
over (min)		12.00	12.00
Storage Coeff.	(min)=	3.26 (ii)	10.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	1.16	0.20 1.366 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	53.13	19.53 40.03
TOTAL RAINFALL	(mm)=	54.13	54.13 54.13
RUNOFF COEFFICIENT	=	0.98	0.36 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0064)
ID= 1 DT=12.0 min

Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	101.48	37.18
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.21	0.19 0.394 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	53.13	19.53 27.93
TOTAL RAINFALL	(mm)=	54.13	54.13 54.13
RUNOFF COEFFICIENT	=	0.98	0.36 0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):		3.87	0.793	1.40	40.03
+ ID2= 2 (0011):		0.91	0.054	1.40	15.97
ID = 3 (0013):		4.78	0.847	1.40	35.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):		4.78	0.847	1.40	35.45
+ ID2= 2 (0012):		6.86	1.366	1.40	40.03
ID = 1 (0013):		11.64	2.213	1.40	38.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):		11.64	2.213	1.40	38.15
+ ID2= 2 (0064):		2.95	0.394	1.40	27.93
ID = 3 (0013):		14.59	2.607	1.40	36.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	2.607	1.40	36.08
OUTFLOW: ID= 1 (0021)	14.590	0.464	1.80	36.06

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.80
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.2970

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70

0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.46	1.80	36.06	0.30	1.72
OUTFLOW: ID= 1 (0031)	14.59	0.46	1.90	36.06	0.30	1.72

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.363 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 16.423
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.303

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	101.48	37.18
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.17	0.03	0.204 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	41.03
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	101.48	37.18
over (min)		12.00	12.00
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.36	0.09	0.451 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	38.01
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	6.53	0.363	1.40	16.42
+ ID2= 2 (0017):	2.34	0.451	1.40	38.01
ID = 3 (0019):	8.87	0.815	1.40	22.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):	8.87	0.815	1.40	22.12
+ ID2= 2 (0018):	0.97	0.204	1.40	41.03
ID = 1 (0019):	9.84	1.019	1.40	23.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	9.84	1.019	1.40	23.98
+ ID2= 2 (0031):	14.59	0.464	1.90	36.06
ID = 3 (0032):	24.43	1.189	1.40	31.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	1.189	1.40	31.20
OUTFLOW: ID= 1 (0022)	24.430	0.436	3.10	31.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 36.69
TIME SHIFT OF PEAK FLOW (min)=102.00
MAXIMUM STORAGE USED (ha.m.)= 0.2365

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW (cms)= 0.458 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 17.151
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.317

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

CALIB					
NASHYD (0025)	Area (ha)=	2.59	Curve Number (CN)=	74.0
ID= 1 DT=12.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.22		

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.126 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 16.829
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.311

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

CALIB					
NASHYD (0027)	Area (ha)=	1.61	Curve Number (CN)=	74.0
ID= 1 DT=12.0 min	Ia (mm)=	5.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.13		

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.102 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 14.119
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.261

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

CALIB					
STANDHYD (0024)	Area (ha)=	6.71		
ID= 1 DT=12.0 min	Total Imp(%)=	71.00	Dir. Conn.(%)=	71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		101.48	37.18
over (min)		12.00	12.00
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	1.34	0.16	1.507 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	43.39
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0062)	Area (ha)=	0.85		
ID= 1 DT=12.0 min	Total Imp(%)=	28.00	Dir. Conn.(%)=	28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		101.48	37.18
over (min)		12.00	12.00
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.07	0.05	0.119 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	28.93
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.53

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.458	1.60	17.15
+ ID2= 2 (0024):	6.71	1.507	1.40	43.39
ID = 3 (0028):	16.89	1.896	1.40	27.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	1.896	1.40	27.57
+ ID2= 2 (0025):	2.59	0.126	1.40	16.83
ID = 1 (0028):	19.48	2.022	1.40	26.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	2.022	1.40	26.15
+ ID2= 2 (0027):	1.61	0.102	1.40	14.12
ID = 3 (0028):	21.09	2.124	1.40	25.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	2.124	1.40	25.23
+ ID2= 2 (0062):	0.85	0.119	1.40	28.93
ID = 1 (0028):	21.94	2.242	1.40	25.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.436	3.10	31.19
+ ID2= 2 (0028):	21.94	2.242	1.40	25.37
ID = 3 (0029):	46.37	2.344	1.40	28.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE

	(cms)	(ha.m.)		(cms)	(ha.m.)
	0.0000	0.0000		1.3030	1.3940
	0.4380	0.4440		1.5000	1.8008
	0.9910	1.0000		1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	2.344	1.40	28.44
OUTFLOW: ID= 1 (0030)	46.370	0.509	4.10	28.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.71
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.5154

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.43	1.083	25.32	2.083	7.85	3.08	4.06
0.167	3.43	1.167	25.32	2.167	7.85	3.17	4.06
0.250	3.92	1.250	135.63	2.250	6.73	3.25	3.78
0.333	3.92	1.333	135.63	2.333	6.73	3.33	3.78
0.417	4.59	1.417	33.17	2.417	5.91	3.42	3.54
0.500	4.59	1.500	33.17	2.500	5.91	3.50	3.54
0.583	5.59	1.583	17.50	2.583	5.29	3.58	3.33
0.667	5.59	1.667	17.50	2.667	5.29	3.67	3.33
0.750	7.28	1.750	12.21	2.750	4.79	3.75	3.15
0.833	7.28	1.833	12.21	2.833	4.79	3.83	3.15
0.917	10.84	1.917	9.50	2.917	4.39	3.92	2.99
1.000	10.84	2.000	9.50	3.000	4.39	4.00	2.99

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.095 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 17.273
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.319

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

CALIB
STANDHYD (0004)
ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.93	0.52
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	3.52	1.200	43.70	2.200	7.66	3.20	4.02
0.400	4.14	1.400	101.48	2.400	6.45	3.40	3.70
0.600	5.09	1.600	25.33	2.600	5.60	3.60	3.44
0.800	6.72	1.800	13.97	2.800	4.96	3.80	3.21
1.000	10.25	2.000	9.95	3.000	4.46	4.00	3.02

			TOTALS
Max.Eff.Inten.(mm/hr)=	101.48	37.18	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
PEAK FLOW (cms)=	0.26	0.04	0.306 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	53.13	19.53	41.03
TOTAL RAINFALL (mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT =	0.98	0.36	0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0063)
ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.01	2.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

			TOTALS
Max.Eff.Inten.(mm/hr)=	101.48	37.18	
over (min)	12.00	12.00	
Storage Coeff. (min)=	1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
PEAK FLOW (cms)=	0.29	0.22	0.505 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	53.13	19.53	28.94
TOTAL RAINFALL (mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT =	0.98	0.36	0.53

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.306	1.40	41.03
+ ID2= 2 (0005):	1.33	0.095	1.42	17.27
ID = 3 (0007):	2.78	0.382	1.42	29.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.382	1.42	29.66
+ ID2= 2 (0063):	3.62	0.505	1.40	28.94
ID = 1 (0007):	6.40	0.861	1.42	29.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	0.861	1.42	29.25
OUTFLOW: ID= 1 (0033)	6.400	0.058	2.92	29.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.75
TIME SHIFT OF PEAK FLOW (min)= 90.00
MAXIMUM STORAGE USED (ha.m.)= 0.1362

```
| ROUTE PIPE (0034)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 850.00
                    Slope      (m/m)=  0.005
                    Manning n        =  0.013
```

<-------------- TRAVEL TIME TABLE -------------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
	<---- hydrograph ---->					
INFLOW : ID= 2 (0033)	6.40	0.06	2.92	29.16	0.10	0.86
OUTFLOW: ID= 1 (0034)	6.40	0.06	3.25	29.16	0.10	0.86

```
| CALIB              |
| NASHYD    (0035)   |   Area     (ha)=   8.03   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   1.394

     PEAK FLOW       (cms)=   0.392 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  16.829
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.311

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
| CALIB              |
| NASHYD    (0037)   |   Area     (ha)=  10.64   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.24

     Unit Hyd Qpeak  (cms)=   1.693

     PEAK FLOW       (cms)=   0.493 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  16.993
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.314

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
| CALIB              |
| NASHYD    (0038)   |   Area     (ha)=   2.11   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.096 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  17.107
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.316
```

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

```
| CALIB              |
| STANDHYD  (0036)   |   Area     (ha)=  17.98
|ID= 1 DT=12.0 min   |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	101.48	37.18	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	3.09	0.59	3.682 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	40.03
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

```
| CALIB              |
| STANDHYD  (0039)   |   Area     (ha)=   1.21
|ID= 1 DT=12.0 min   |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	101.48	37.18	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.05	0.233 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	38.01
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

```
| DUHYD     (0074)   |
| Inlet Cap.=0.169   |
| #of Inlets=    1   |
| Total(cms)=  0.2   |
--------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.23	1.40	38.01
MAJOR SYS.(ID= 2):	0.12	0.06	1.40	38.01
MINOR SYS.(ID= 3):	1.09	0.17	1.40	38.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
| CALIB              |
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```
| STANDHYD  (0047) |   Area     (ha)=   1.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.96         0.54
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     101.48        37.18
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.00 (ii)    7.92 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.27         0.05          0.316 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      53.13        19.53          41.03
     TOTAL RAINFALL   (mm)=      54.13        54.13          54.13
     RUNOFF COEFFICIENT   =       0.98         0.36           0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0072) |
| Inlet Cap.=0.363 |
| #of Inlets=    1 |
| Total(cms)=  0.4 |
-------------------          AREA     QPEAK     TPEAK    R.V.
                             (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):    1.50      0.32      1.40   41.03
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):    1.50      0.32      1.40   41.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0035):     8.03   0.392     1.40    16.83
        + ID2= 2 (0036):    17.98   3.682     1.40    40.03
          ================================================
          ID = 3 (0040):    26.01   4.074     1.40    32.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):    26.01   4.074     1.40    32.87
        + ID2= 2 (0037):    10.64   0.493     1.60    16.99
          ================================================
          ID = 1 (0040):    36.65   4.546     1.40    28.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):    36.65   4.546     1.40    28.26
        + ID2= 2 (0038):     2.11   0.096     1.60    17.11
          ================================================
          ID = 3 (0040):    38.76   4.630     1.40    27.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0072 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0040):    38.76   4.630     1.40    27.65
        + ID2= 2 (0072):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0040):    38.76   4.630     1.40    27.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):    38.76   4.630     1.40    27.65
        + ID2= 2 (0074):     0.12   0.064     1.40    38.01
          ================================================
          ID = 3 (0040):    38.88   4.695     1.40    27.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):     6.40   0.058     3.25    29.16
        + ID2= 2 (0040):    38.88   4.695     1.40    27.68
          ================================================
          ID = 3 (0041):    45.28   4.486     1.42    27.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |    OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |     (cms)     (ha.m.)
                        0.0000     0.0000     |    3.1150     0.9004
                        1.2740     0.5550     |    3.6250     1.1600
                        2.2650     0.7154     |    3.9640     1.3570

                                AREA     QPEAK     TPEAK        R.V.
                                (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0041)     45.282     4.486      1.42       27.90
     OUTFLOW: ID= 1 (0043)     45.282     1.173      1.83       27.89

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 26.14
                    TIME SHIFT OF PEAK FLOW          (min)= 25.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=  0.5119

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0044) |   Area     (ha)=   3.28   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.178 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  11.006
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.203

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.103 (i)
     TIME TO PEAK    (hrs)=   1.400
```

RUNOFF VOLUME (mm)= 16.918
TOTAL RAINFALL (mm)= 54.135
RUNOFF COEFFICIENT = 0.313

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

CALIB					
STANDHYD (0045)	Area (ha)= 10.16				
ID= 1 DT=12.0 min	Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	1.89	0.29	2.181 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	41.71
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0059)	Area (ha)= 1.27				
ID= 1 DT=12.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.24	0.03	0.278 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	42.38
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0069)					
Inlet Cap.=0.320					
#of Inlets= 1					
Total(cms)= 0.3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.27	0.28	1.40	42.38
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		1.27	0.28	1.40	42.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0070)	Area (ha)= 2.50				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.38	1.12	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.39	0.09	0.482 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	38.01
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)					
Inlet Cap.=0.550					
#of Inlets= 1					
Total(cms)= 0.6		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		2.50	0.48	1.40	38.01
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		2.50	0.48	1.40	38.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0044):	3.28	0.178	1.40	11.01
	+ ID2= 2 (0045):	10.16	2.181	1.40	41.71
	ID = 3 (0048):	13.44	2.359	1.40	34.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	13.44	2.359	1.40	34.22
	+ ID2= 2 (0046):	2.21	0.103	1.40	16.92
	ID = 1 (0048):	15.65	2.462	1.40	31.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	15.65	2.462	1.40	31.77
	+ ID2= 2 (0069):	1.27	0.278	1.40	42.38
	ID = 3 (0048):	16.92	2.739	1.40	32.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):     16.92   2.739     1.40    32.57
        + ID2= 2 (0071):      2.50   0.482     1.40    38.01
          ===============================================
          ID = 1 (0048):     19.42   3.222     1.40    33.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0048) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):     19.42   3.222     1.40    33.27
        + ID2= 2 (0072):      1.50   0.316     1.40    41.03
          ===============================================
          ID = 3 (0048):     20.92   3.538     1.40    33.83

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000     0.0000   |   0.9630     0.3823
                           0.5430     0.1233   |   1.3030     0.6907
                           0.7650     0.2343   |   1.5860     1.0977

                                 AREA     QPEAK      TPEAK       R.V.
                                 (ha)     (cms)      (hrs)       (mm)
     INFLOW : ID= 2 (0048)      20.920      3.538       1.40       33.83
     OUTFLOW: ID= 1 (0049)      20.920      0.882       1.70       33.82

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 24.94
                  TIME SHIFT OF PEAK FLOW        (min)= 18.00
                  MAXIMUM  STORAGE   USED      (ha.m.)=  0.3221

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--------------------
| ROUTE PIPE (0050)|      PIPE Number     =   1.00
| IN= 2---> OUT= 1 |      Diameter    (mm)=1650.00
| DT=  5.0 min     |      Length       (m)= 467.00
--------------------      Slope      (m/m)=  0.006
                          Manning n       =  0.013

     <----------------- TRAVEL TIME TABLE -------------------->
      DEPTH      VOLUME    FLOW RATE    VELOCITY     TRAV.TIME
       (m)      (cu.m.)      (cms)        (m/s)         min
       0.09     .201E+02      0.0         0.88          8.87
       0.17     .560E+02      0.2         1.37          5.68
       0.26     .101E+03      0.4         1.76          4.42
       0.35     .153E+03      0.7         2.09          3.72
       0.43     .210E+03      1.1         2.38          3.27
       0.52     .270E+03      1.5         2.64          2.95
       0.61     .334E+03      2.0         2.86          2.72
       0.69     .399E+03      2.6         3.06          2.55
       0.78     .466E+03      3.2         3.23          2.41
       0.87     .533E+03      3.9         3.38          2.31
       0.96     .599E+03      4.5         3.50          2.22
       1.04     .665E+03      5.1         3.60          2.16
       1.13     .728E+03      5.7         3.68          2.11
       1.22     .789E+03      6.3         3.74          2.08
       1.30     .846E+03      6.8         3.76          2.07
       1.39     .897E+03      7.2         3.76          2.07
       1.48     .943E+03      7.5         3.72          2.09
       1.56     .978E+03      7.6         3.63          2.15
       1.65     .999E+03      7.1         3.30          2.36
                                    <---- hydrograph ---->   <-pipe / channel->
                              AREA    QPEAK   TPEAK   R.V.   MAX DEPTH  MAX VEL
                              (ha)    (cms)   (hrs)   (mm)      (m)      (m/s)
     INFLOW : ID= 2 (0049)   20.92     0.88    1.70  33.82      0.39      2.23
     OUTFLOW: ID= 1 (0050)   20.92     0.88    1.70  33.82      0.39      2.23

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| CALIB            |
| NASHYD    (0054) |    Area    (ha)=   1.34   Curve Number   (CN)= 74.0
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```
|ID= 1 DT=12.0 min |    Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------    U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.233

     PEAK FLOW       (cms)=   0.065 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  16.829
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.311

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

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--------------------
| CALIB            |
| NASHYD    (0056) |    Area    (ha)=   0.10   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |    Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------    U.H. Tp(hrs)=   0.05

     Unit Hyd Qpeak  (cms)=   0.076

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   1.500
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.028

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

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--------------------
| CALIB            |
| NASHYD    (0058) |    Area    (ha)=   2.51   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |    Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------    U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.355

     PEAK FLOW       (cms)=   0.113 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  17.151
     TOTAL RAINFALL   (mm)=  54.135
     RUNOFF COEFFICIENT   =   0.317

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

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--------------------
| CALIB            |
| STANDHYD  (0057) |    Area    (ha)=   0.47
|ID= 1 DT=12.0 min |    Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.33         0.14
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    101.48        37.18
                over (min)      12.00        12.00
     Storage Coeff.  (min)=      1.00 (ii)    7.92 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=      0.09         0.01          0.105 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=     53.13        19.53          43.05
     TOTAL RAINFALL   (mm)=     54.13        54.13          54.13
     RUNOFF COEFFICIENT   =      0.98         0.36           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD   (0073) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
```

ID1= 1 (0057):	0.47	0.105	1.40	43.05
+ ID2= 2 (0058):	2.51	0.113	1.60	17.15
ID = 3 (0073):	2.98	0.201	1.40	21.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)				
Inlet Cap.=0.181				
#of Inlets= 1				
Total(cms)= 0.2	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.20	1.40	21.23
MAJOR SYS.(ID= 2):	0.07	0.02	1.40	21.23
MINOR SYS.(ID= 3):	2.91	0.18	1.40	21.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053) | Area (ha)= 5.86
ID= 1 DT=12.0 min | Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.93	0.22	1.142 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	38.35
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0055) | Area (ha)= 2.71
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.17	0.362 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	27.93
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0065) | Area (ha)= 2.71
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		101.48	37.18	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.00 (ii)	7.92 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.17	0.362 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	53.13	19.53	27.93
TOTAL RAINFALL	(mm)=	54.13	54.13	54.13
RUNOFF COEFFICIENT	=	0.98	0.36	0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	1.142	1.40	38.35
+ ID2= 2 (0054):	1.34	0.065	1.40	16.83
ID = 3 (0051):	7.20	1.208	1.40	34.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.208	1.40	34.34
+ ID2= 2 (0055):	2.71	0.362	1.40	27.93
ID = 1 (0051):	9.91	1.570	1.40	32.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.570	1.40	32.59
+ ID2= 2 (0056):	0.10	0.001	1.40	1.50
ID = 3 (0051):	10.01	1.570	1.40	32.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.570	1.40	32.28
+ ID2= 2 (0065):	2.71	0.362	1.40	27.93
ID = 1 (0051):	12.72	1.933	1.40	31.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0051):     12.72    1.933     1.40    31.35
       + ID2= 2 (0066):      2.91    0.181     1.40    21.23
         ================================================
         ID = 3 (0051):     15.63    2.114     1.40    29.47

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

```
-------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0069 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0051):     15.63    2.114     1.40    29.47
       + ID2= 2 (0069):      0.00    0.000     0.00     0.00
         ================================================
         ID = 1 (0051):     15.63    2.114     1.40    29.47

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

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-------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0050):     20.92    0.884     1.70    33.82
       + ID2= 2 (0051):     15.63    2.114     1.40    29.47
         ================================================
         ID = 3 (0060):     36.55    2.750     1.40    31.96

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE  |  OUTFLOW    STORAGE
-------------------        (cms)     (ha.m.)  |   (cms)     (ha.m.)
                           0.0000     0.0000  |  0.5100      0.3577
                           0.2970     0.1233  |  0.6800      0.7154
                           0.4250     0.2220  |  0.7930      1.1964

                              AREA     QPEAK      TPEAK       R.V.
                              (ha)     (cms)      (hrs)       (mm)
    INFLOW : ID= 2 (0060)    36.554     2.750      1.40       31.96
    OUTFLOW: ID= 1 (0061)    36.554     0.610      3.30       31.96

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 22.17
                TIME SHIFT OF PEAK FLOW       (min)=114.00
                MAXIMUM  STORAGE  USED        (ha.m.)=  0.5678
```

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  ****************************
  ** SIMULATION NUMBER:   4 **
  ****************************

-------------------
| CHICAGO STORM    |     IDF curve parameters: A=1100.000
| Ptotal= 62.15 mm |                           B=   2.000
-------------------                           C=   0.776
                        used in:   INTENSITY =  A / (t + B)^C

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

  TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
   hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
  0.17    4.06  |  1.17   27.34  |    2.17    9.00  |  3.17    4.78
  0.33    4.62  |  1.33  159.94  |    2.33    7.77  |  3.33    4.46
  0.50    5.38  |  1.50   35.45  |    2.50    6.86  |  3.50    4.19
  0.67    6.51  |  1.67   19.27  |    2.67    6.16  |  3.67    3.95
  0.83    8.38  |  1.83   13.70  |    2.83    5.61  |  3.83    3.74
  1.00   12.24  |  2.00   10.80  |    3.00    5.16  |  4.00    3.55
```

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-------------------
| CALIB            |
| NASHYD    (0011) |   Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                                  ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
   hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
  0.200    4.16 |  1.200   49.44 |   2.200    8.80  |  3.20    4.73
  0.400    4.87 |  1.400  118.44 |   2.400    7.47  |  3.40    4.37
  0.600    5.94 |  1.600   27.36 |   2.600    6.51  |  3.60    4.07
  0.800    7.75 |  1.800   15.56 |   2.800    5.80  |  3.80    3.81
  1.000   11.60 |  2.000   11.29 |   3.000    5.23  |  4.00    3.59

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.072 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  20.423
     TOTAL RAINFALL   (mm)=  62.155
     RUNOFF COEFFICIENT   =   0.329

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB            |
| STANDHYD  (0010) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      2.36          1.51
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n           =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=    118.44         48.02
           over      (min)     12.00         12.00
     Storage Coeff.  (min)=     0.94 (ii)     7.19 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.78          0.17       0.946 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40        1.40
     RUNOFF VOLUME    (mm)=     61.15         24.54       46.87
     TOTAL RAINFALL   (mm)=     62.15         62.15       62.15
     RUNOFF COEFFICIENT   =      0.98          0.39        0.75

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB            |
| STANDHYD  (0012) |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.18          2.68
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=    213.85         20.00
     Mannings n           =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=    118.44         48.02
           over      (min)     12.00         12.00
     Storage Coeff.  (min)=      3.06 (ii)     9.30 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=      0.14          0.10
                                                        *TOTALS*
     PEAK FLOW       (cms)=      1.36          0.27       1.634 (iii)
     TIME TO PEAK    (hrs)=      1.40          1.40        1.40
     RUNOFF VOLUME    (mm)=     61.15         24.54       46.88
     TOTAL RAINFALL   (mm)=     62.15         62.15       62.15
     RUNOFF COEFFICIENT   =      0.98          0.39        0.75
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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0064) ID= 1 DT=12.0 min	Area (ha)= 2.95 Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		118.44	48.02
over (min)		12.00	12.00
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.24	0.25	0.491 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	33.69
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	0.946	1.40	46.87
+ ID2= 2 (0011):	0.91	0.072	1.40	20.42
ID = 3 (0013):	4.78	1.019	1.40	41.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0013):	4.78	1.019	1.40	41.84
+ ID2= 2 (0012):	6.86	1.634	1.40	46.88
ID = 1 (0013):	11.64	2.653	1.40	44.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	11.64	2.653	1.40	44.81
+ ID2= 2 (0064):	2.95	0.491	1.40	33.69
ID = 3 (0013):	14.59	3.144	1.40	42.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.6510	0.4563
	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	3.144	1.40	42.56
OUTFLOW: ID= 1 (0021)	14.590	0.527	1.80	42.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.77
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.3510

ROUTE PIPE (0031) IN= 2---> OUT= 1 DT= 5.0 min	PIPE Number = 1.00 Diameter (mm)=1650.00 Length (m)= 500.00 Slope (m/m)= 0.005 Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.53	1.80	42.54	0.32	1.79
OUTFLOW: ID= 1 (0031)	14.59	0.53	1.90	42.54	0.32	1.79

CALIB NASHYD (0016) ID= 1 DT=12.0 min	Area (ha)= 6.53 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.482 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 21.004
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.338

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

CALIB STANDHYD (0018) ID= 1 DT=12.0 min	Area (ha)= 0.97 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		118.44	48.02
over (min)		12.00	12.00
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.20	0.04	0.244 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	47.97
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		118.44	48.02
over (min)		12.00	12.00
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.42	0.12	0.542 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	44.68
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):		6.53	0.482	1.40	21.00
+ ID2= 2 (0017):		2.34	0.542	1.40	44.68
ID = 3 (0019):		8.87	1.024	1.40	27.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0019):		8.87	1.024	1.40	27.25
+ ID2= 2 (0018):		0.97	0.244	1.40	47.97
ID = 1 (0019):		9.84	1.268	1.40	29.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):		9.84	1.268	1.40	29.29
+ ID2= 2 (0031):		14.59	0.527	1.90	42.54
ID = 3 (0032):		24.43	1.496	1.40	37.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	1.496	1.40	37.21
OUTFLOW: ID= 1 (0022)	24.430	0.490	3.30	37.20

PEAK FLOW REDUCTION [Qout/Qin](%)= 32.76
TIME SHIFT OF PEAK FLOW (min)=114.00
MAXIMUM STORAGE USED (ha.m.)= 0.2916

CALIB
NASHYD (0023)
ID= 1 DT=12.0 min

Area (ha)= 10.18 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 1.440

PEAK FLOW	(cms)=	0.592 (i)
TIME TO PEAK	(hrs)=	1.600
RUNOFF VOLUME	(mm)=	21.935
TOTAL RAINFALL	(mm)=	62.155
RUNOFF COEFFICIENT	=	0.353

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

CALIB
NASHYD (0025)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW	(cms)=	0.168 (i)
TIME TO PEAK	(hrs)=	1.400
RUNOFF VOLUME	(mm)=	21.523
TOTAL RAINFALL	(mm)=	62.155
RUNOFF COEFFICIENT	=	0.346

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

CALIB
NASHYD (0027)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW	(cms)=	0.134 (i)
TIME TO PEAK	(hrs)=	1.400
RUNOFF VOLUME	(mm)=	18.058
TOTAL RAINFALL	(mm)=	62.155
RUNOFF COEFFICIENT	=	0.291

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

CALIB
STANDHYD (0024)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 71.00 Dir. Conn.(%)= 71.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.76	1.95
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		118.44	48.02
over (min)		12.00	12.00

Storage Coeff. (min)=	0.94 (ii)	7.19 (ii)	
Unit Hyd. Tpeak (min)=	12.00	12.00	
Unit Hyd. peak (cms)=	0.14	0.11	
			TOTALS
PEAK FLOW (cms)=	1.57	0.22	1.786 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	61.15	24.54	50.54
TOTAL RAINFALL (mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT =	0.98	0.39	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0062)
ID= 1 DT=12.0 min

Area (ha)= 0.85
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.24	0.61
Dep. Storage (mm)=		1.00	1.50
Average Slope (%)=		2.00	2.00
Length (m)=		30.00	20.00
Mannings n =		0.013	0.250
Max.Eff.Inten.(mm/hr)=		118.44	48.02
over (min)		12.00	12.00
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW (cms)=		0.08	0.07 0.147 (iii)
TIME TO PEAK (hrs)=		1.40	1.40 1.40
RUNOFF VOLUME (mm)=		61.15	24.54 34.79
TOTAL RAINFALL (mm)=		62.15	62.15 62.15
RUNOFF COEFFICIENT =		0.98	0.39 0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	10.18	0.592	1.60	21.94
+ ID2= 2 (0024):	6.71	1.786	1.40	50.54
ID = 3 (0028):	16.89	2.305	1.40	33.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.305	1.40	33.30
+ ID2= 2 (0025):	2.59	0.168	1.40	21.52
ID = 1 (0028):	19.48	2.473	1.40	31.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	2.473	1.40	31.73
+ ID2= 2 (0027):	1.61	0.134	1.40	18.06
ID = 3 (0028):	21.09	2.608	1.40	30.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	2.608	1.40	30.69
+ ID2= 2 (0062):	0.85	0.147	1.40	34.79
ID = 1 (0028):	21.94	2.755	1.40	30.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.490	3.30	37.20
+ ID2= 2 (0028):	21.94	2.755	1.40	30.85
ID = 3 (0029):	46.37	2.883	1.40	34.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	2.883	1.40	34.19
OUTFLOW: ID= 1 (0030)	46.370	0.598	4.10	34.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.75
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.6055

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.06	1.083	27.34	2.083	9.00	3.08	4.78
0.167	4.06	1.167	27.34	2.167	9.00	3.17	4.78
0.250	4.62	1.250	159.94	2.250	7.77	3.25	4.46
0.333	4.62	1.333	159.94	2.333	7.77	3.33	4.46
0.417	5.38	1.417	35.45	2.417	6.86	3.42	4.19
0.500	5.38	1.500	35.45	2.500	6.86	3.50	4.19
0.583	6.51	1.583	19.27	2.583	6.16	3.58	3.95
0.667	6.51	1.667	19.27	2.667	6.16	3.67	3.95
0.750	8.38	1.750	13.70	2.750	5.61	3.75	3.74
0.833	8.38	1.833	13.70	2.833	5.61	3.83	3.74
0.917	12.24	1.917	10.80	2.917	5.16	3.92	3.55
1.000	12.24	2.000	10.80	3.000	5.16	4.00	3.55

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.125 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 22.092
TOTAL RAINFALL (mm)= 62.154
RUNOFF COEFFICIENT = 0.355

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

```
--------------------
| CALIB            |
| STANDHYD  (0004) |   Area    (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.93         0.52
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
     TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN
      hrs   mm/hr  |   hrs   mm/hr  |   hrs   mm/hr  |   hrs   mm/hr
    0.200    4.16  | 1.200   49.44  | 2.200    8.80  |  3.20    4.73
    0.400    4.87  | 1.400  118.44  | 2.400    7.47  |  3.40    4.37
    0.600    5.94  | 1.600   27.36  | 2.600    6.51  |  3.60    4.07
    0.800    7.75  | 1.800   15.56  | 2.800    5.80  |  3.80    3.81
    1.000   11.60  | 2.000   11.29  | 3.000    5.23  |  4.00    3.59

     Max.Eff.Inten.(mm/hr)=    118.44        48.02
           over (min)          12.00        12.00
     Storage Coeff.  (min)=     0.94 (ii)    7.19 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.31         0.06       0.364 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40        1.40
     RUNOFF VOLUME    (mm)=    61.15        24.54       47.97
     TOTAL RAINFALL   (mm)=    62.15        62.15       62.15
     RUNOFF COEFFICIENT    =    0.98         0.39        0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0063) |   Area    (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.01         2.61
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    118.44        48.02
           over (min)          12.00        12.00
     Storage Coeff.  (min)=     0.94 (ii)    7.19 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.33         0.29       0.627 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40        1.40
     RUNOFF VOLUME    (mm)=    61.15        24.54       34.79
     TOTAL RAINFALL   (mm)=    62.15        62.15       62.15
     RUNOFF COEFFICIENT    =    0.98         0.39        0.56

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0007) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0004):     1.45   0.364     1.40    47.97
       + ID2= 2 (0005):     1.33   0.125     1.42    22.09
         ================================================
         ID = 3 (0007):     2.78   0.467     1.42    35.59

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0007) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0007):     2.78   0.467     1.42    35.59
       + ID2= 2 (0063):     3.62   0.627     1.40    34.79
         ================================================
         ID = 1 (0007):     6.40   1.060     1.42    35.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0033) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   0.3260      0.8017
                          0.0790     0.1850    |   0.3960      0.9004
                          0.2270     0.3947    |   0.0000      0.0000

                             AREA     QPEAK     TPEAK        R.V.
                             (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0007)   6.400     1.060     1.42        35.15
     OUTFLOW: ID= 1 (0033)   6.400     0.070     3.00        35.06

               PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.58
               TIME SHIFT OF PEAK FLOW          (min)= 95.00
               MAXIMUM  STORAGE   USED        (ha.m.)=  0.1632

--------------------------------------------------------------------------------
--------------------
| ROUTE PIPE (0034)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 850.00
--------------------     Slope      (m/m)=  0.005
                         Manning n        =  0.013

     <---------- TRAVEL TIME TABLE ---------->
       DEPTH      VOLUME    FLOW RATE    VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)        (m/s)         min
        0.09    .367E+02         0.0         0.80       17.68
        0.17    .102E+03         0.1         1.25       11.33
        0.26    .184E+03         0.3         1.61        8.81
        0.35    .278E+03         0.6         1.91        7.41
        0.43    .382E+03         1.0         2.18        6.51
        0.52    .492E+03         1.4         2.41        5.88
        0.61    .608E+03         1.9         2.61        5.43
        0.69    .727E+03         2.4         2.79        5.08
        0.78    .848E+03         2.9         2.95        4.81
        0.87    .970E+03         3.5         3.08        4.60
        0.96    .109E+04         4.1         3.20        4.43
        1.04    .121E+04         4.7         3.29        4.31
        1.13    .133E+04         5.2         3.36        4.22
        1.22    .144E+04         5.8         3.41        4.15
        1.30    .154E+04         6.2         3.44        4.12
        1.39    .163E+04         6.6         3.43        4.13
        1.48    .172E+04         6.9         3.40        4.17
        1.56    .178E+04         6.9         3.31        4.28
        1.65    .182E+04         6.5         3.02        4.70
                                      <---- hydrograph ---->   <-pipe / channel->
                                AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                                (ha)    (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0033)     6.40     0.07     3.00  35.06       0.11      0.90
     OUTFLOW: ID= 1 (0034)     6.40     0.07     3.25  35.05       0.11      0.90

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--------------------
| CALIB            |
| NASHYD    (0035) |   Area     (ha)=   8.03   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=    1.394

     PEAK FLOW       (cms)=    0.521 (i)
     TIME TO PEAK    (hrs)=    1.400
     RUNOFF VOLUME    (mm)=   21.524
     TOTAL RAINFALL   (mm)=   62.155
```

RUNOFF COEFFICIENT = 0.346

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

CALIB					
NASHYD (0037)	Area	(ha)= 10.64	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.24			

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.633 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 21.734
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.350

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

CALIB					
NASHYD (0038)	Area	(ha)= 2.11	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.26			

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.124 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 21.879
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.352

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

CALIB					
STANDHYD (0036)	Area	(ha)= 17.98			
ID= 1 DT=12.0 min	Total Imp	(%)= 61.00	Dir. Conn.	(%)= 61.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	118.44	48.02	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.94 (ii)	7.19 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	3.61	0.79	4.397 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	46.88
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0039)	Area	(ha)= 1.21			
ID= 1 DT=12.0 min	Total Imp	(%)= 55.00	Dir. Conn.	(%)= 55.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	118.44	48.02
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.22	0.06 0.280 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	61.15	24.54 44.68
TOTAL RAINFALL	(mm)=	62.15	62.15 62.15
RUNOFF COEFFICIENT	=	0.98	0.39 0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)					
Inlet Cap.=0.169					
#of Inlets= 1					
Total(cms)= 0.2		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.21	0.28	1.40	44.68
MAJOR SYS.(ID= 2):		0.18	0.11	1.40	44.68
MINOR SYS.(ID= 3):		1.03	0.17	1.40	44.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0047)	Area	(ha)= 1.50			
ID= 1 DT=12.0 min	Total Imp	(%)= 64.00	Dir. Conn.	(%)= 64.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	118.44	48.02	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.94 (ii)	7.19 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.32	0.06	0.377 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	47.97
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)					
Inlet Cap.=0.363					
#of Inlets= 1					
Total(cms)= 0.4		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.50	0.38	1.40	47.97
MAJOR SYS.(ID= 2):		0.02	0.01	1.40	47.97
MINOR SYS.(ID= 3):		1.48	0.36	1.40	47.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0035):		8.03	0.521	1.40	21.52

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          + ID2= 2 (0036):    17.98   4.397     1.40    46.88
            ==============================================
            ID = 3 (0040):    26.01   4.918     1.40    39.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):    26.01   4.918     1.40    39.05
        + ID2= 2 (0037):    10.64   0.633     1.60    21.73
          ================================================
          ID = 1 (0040):    36.65   5.546     1.40    34.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):    36.65   5.546     1.40    34.02
        + ID2= 2 (0038):     2.11   0.124     1.60    21.88
          ================================================
          ID = 3 (0040):    38.76   5.659     1.40    33.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0040):    38.76   5.659     1.40    33.36
        + ID2= 2 (0072):     0.02   0.014     1.40    47.97
          ================================================
          ID = 1 (0040):    38.78   5.673     1.40    33.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0040):    38.78   5.673     1.40    33.37
        + ID2= 2 (0074):     0.18   0.111     1.40    44.68
          ================================================
          ID = 3 (0040):    38.96   5.784     1.40    33.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0034):     6.40   0.070     3.25    35.05
        + ID2= 2 (0040):    38.96   5.784     1.40    33.42
          ================================================
          ID = 3 (0041):    45.36   5.520     1.42    33.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |       OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------          (cms)     (ha.m.)    |    (cms)     (ha.m.)
                            0.0000     0.0000    |   3.1150     0.9004
                            1.2740     0.5550    |   3.6250     1.1600
                            2.2650     0.7154    |   3.9640     1.3570

                                 AREA     QPEAK     TPEAK      R.V.
                                  (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0041)     45.360     5.520     1.42      33.66
     OUTFLOW: ID= 1 (0043)     45.360     1.584     1.83      33.66

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 28.70
                    TIME SHIFT OF PEAK FLOW          (min)= 25.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.6067

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| CALIB            |
| NASHYD    (0044) |   Area     (ha)=   3.28   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.235 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  14.077
     TOTAL RAINFALL   (mm)=  62.155
     RUNOFF COEFFICIENT   =   0.226

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

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-------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.137 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  21.638
     TOTAL RAINFALL   (mm)=  62.155
     RUNOFF COEFFICIENT   =   0.348

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

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| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        6.71          3.45
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      118.44         48.02
               over (min)        12.00         12.00
     Storage Coeff.  (min)=        0.94 (ii)     7.19 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=        2.21          0.39          2.595 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40          1.40
     RUNOFF VOLUME    (mm)=       61.15         24.54         48.71
     TOTAL RAINFALL   (mm)=       62.15         62.15         62.15
     RUNOFF COEFFICIENT   =        0.98          0.39          0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.86          0.41
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      118.44         48.02
               over (min)        12.00         12.00
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     Storage Coeff.  (min)=       0.94 (ii)    7.19 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                *TOTALS*
     PEAK FLOW       (cms)=       0.28         0.05          0.330 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      61.15        24.54          49.43
     TOTAL RAINFALL   (mm)=      62.15        62.15          62.15
     RUNOFF COEFFICIENT   =       0.98         0.39           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.33      1.40   49.43
     ==========================================================
     MAJOR SYS.(ID= 2):   0.01      0.01      1.40   49.43
     MINOR SYS.(ID= 3):   1.26      0.32      1.40   49.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD  (0070)  |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38         1.12
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     118.44        48.02
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.94 (ii)    7.19 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                *TOTALS*
     PEAK FLOW       (cms)=       0.45         0.13          0.579 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      61.15        24.54          44.68
     TOTAL RAINFALL   (mm)=      62.15        62.15          62.15
     RUNOFF COEFFICIENT   =       0.98         0.39           0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0071) |
| Inlet Cap.=0.550 |
| #of Inlets=    1 |
| Total(cms)=  0.6 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.50      0.58      1.40   44.68
     ==========================================================
     MAJOR SYS.(ID= 2):   0.05      0.03      1.40   44.68
     MINOR SYS.(ID= 3):   2.45      0.55      1.40   44.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0048)  |
|   1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0044):     3.28    0.235     1.40    14.08
        + ID2= 2 (0045):    10.16    2.595     1.40    48.71
          ==========================================================
          ID = 3 (0048):    13.44    2.830     1.40    40.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0048)  |
|   3 +  2 =  1     |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):    13.44    2.830     1.40    40.26
        + ID2= 2 (0046):     2.21    0.137     1.40    21.64
          ==========================================================
          ID = 1 (0048):    15.65    2.967     1.40    37.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0048)  |
|   1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):    15.65    2.967     1.40    37.63
        + ID2= 2 (0069):     1.26    0.320     1.40    49.43
          ==========================================================
          ID = 3 (0048):    16.91    3.287     1.40    38.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0048)  |
|   3 +  2 =  1     |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):    16.91    3.287     1.40    38.50
        + ID2= 2 (0071):     2.45    0.550     1.40    44.68
          ==========================================================
          ID = 1 (0048):    19.36    3.837     1.40    39.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0048)  |
|   1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):    19.36    3.837     1.40    39.29
        + ID2= 2 (0072):     1.48    0.363     1.40    47.97
          ==========================================================
          ID = 3 (0048):    20.84    4.200     1.40    39.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0049)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)      (ha.m.)    |   (cms)      (ha.m.)
                          0.0000     0.0000     |  0.9630      0.3823
                          0.5430     0.1233     |  1.3030      0.6907
                          0.7650     0.2343     |  1.5860      1.0977

                                 AREA     QPEAK     TPEAK        R.V.
                                 (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0048)     20.839     4.200      1.40       39.90
     OUTFLOW: ID= 1 (0049)     20.839     0.968      1.70       39.90

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.04
                TIME SHIFT OF PEAK FLOW          (min)= 18.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.3873

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-------------------
| ROUTE PIPE (0050) |     PIPE Number      =   1.00
| IN= 2---> OUT= 1  |     Diameter    (mm)=1650.00
| DT=  5.0 min      |     Length       (m)= 467.00
-------------------       Slope      (m/m)=  0.006
                          Manning n       =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
```

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	<---- hydrograph ---->				<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.84	0.97	1.70	39.90	0.41	2.30
OUTFLOW: ID= 1 (0050)	20.84	0.97	1.70	39.90	0.41	2.30

CALIB
NASHYD (0054)
ID= 1 DT=12.0 min

Area (ha)= 1.34 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.087 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 21.523
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.346

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

CALIB
NASHYD (0056)
ID= 1 DT=12.0 min

Area (ha)= 0.10 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.05

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 1.919
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.031

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

CALIB
NASHYD (0058)
ID= 1 DT=12.0 min

Area (ha)= 2.51 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.355

PEAK FLOW (cms)= 0.146 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 21.935
TOTAL RAINFALL (mm)= 62.155
RUNOFF COEFFICIENT = 0.353

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

CALIB
STANDHYD (0057)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.33	0.14
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	118.44	48.02
over (min)	12.00	12.00
Storage Coeff. (min)=	0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)= 0.11	0.02	0.124 (iii)
TIME TO PEAK	(hrs)= 1.40	1.40	1.40
RUNOFF VOLUME	(mm)= 61.15	24.54	50.16
TOTAL RAINFALL	(mm)= 62.15	62.15	62.15
RUNOFF COEFFICIENT	= 0.98	0.39	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0073)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	0.47	0.124	1.40	50.16
+ ID2= 2 (0058):	2.51	0.146	1.60	21.94
ID = 3 (0073):	2.98	0.252	1.40	26.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)
Inlet Cap.=0.181
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.25	1.40	26.39
MAJOR SYS.(ID= 2):	0.19	0.07	1.40	26.39
MINOR SYS.(ID= 3):	2.79	0.18	1.40	26.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0053)
ID= 1 DT=12.0 min

Area (ha)= 5.86
Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.28	2.58
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	118.44	48.02
over (min)	12.00	12.00
Storage Coeff. (min)=	0.94 (ii)	7.19 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.11

		TOTALS
PEAK FLOW	(cms)= 1.08	0.29	1.370 (iii)
TIME TO PEAK	(hrs)= 1.40	1.40	1.40
RUNOFF VOLUME	(mm)= 61.15	24.54	45.05
TOTAL RAINFALL	(mm)= 62.15	62.15	62.15
RUNOFF COEFFICIENT	= 0.98	0.39	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0055)	Area (ha)= 2.71				
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		118.44	48.02	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
			TOTALS	
PEAK FLOW	(cms)=	0.22	0.23	0.451 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	33.69
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0065)	Area (ha)= 2.71				
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		118.44	48.02	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.94 (ii)	7.19 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
			TOTALS	
PEAK FLOW	(cms)=	0.22	0.23	0.451 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	61.15	24.54	33.69
TOTAL RAINFALL	(mm)=	62.15	62.15	62.15
RUNOFF COEFFICIENT	=	0.98	0.39	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0053):	5.86	1.370	1.40	45.05
+ ID2= 2 (0054):	1.34	0.087	1.40	21.52
ID = 3 (0051):	7.20	1.457	1.40	40.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	7.20	1.457	1.40	40.67
+ ID2= 2 (0055):	2.71	0.451	1.40	33.69
ID = 1 (0051):	9.91	1.908	1.40	38.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	9.91	1.908	1.40	38.76
+ ID2= 2 (0056):	0.10	0.001	1.40	1.92
ID = 3 (0051):	10.01	1.909	1.40	38.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	10.01	1.909	1.40	38.39
+ ID2= 2 (0065):	2.71	0.451	1.40	33.69
ID = 1 (0051):	12.72	2.360	1.40	37.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0051):	12.72	2.360	1.40	37.39
+ ID2= 2 (0066):	2.79	0.181	1.40	26.39
ID = 3 (0051):	15.51	2.541	1.40	35.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0051):	15.51	2.541	1.40	35.41
+ ID2= 2 (0069):	0.01	0.010	1.40	49.43
ID = 1 (0051):	15.52	2.551	1.40	35.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0050):	20.84	0.970	1.70	39.90
+ ID2= 2 (0051):	15.52	2.551	1.40	35.43
ID = 3 (0060):	36.36	3.245	1.40	37.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.5100	0.3577
	0.2970	0.1233	0.6800	0.7154
	0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	36.359	3.245	1.40	37.99
OUTFLOW: ID= 1 (0061)	36.359	0.667	3.50	37.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.56
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 0.6886

****
** SIMULATION NUMBER: 5 **
****

CHICAGO STORM
Ptotal= 72.26 mm

IDF curve parameters: A=1488.000
B= 3.000
C= 0.803
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.27	1.17	33.54	2.17	9.99	3.17	5.08
0.33	4.89	1.33	189.72	2.33	8.52	3.33	4.72
0.50	5.75	1.50	44.29	2.50	7.46	3.50	4.41
0.67	7.05	1.67	22.84	2.67	6.65	3.67	4.15
0.83	9.24	1.83	15.74	2.83	6.02	3.83	3.91
1.00	13.94	2.00	12.16	3.00	5.50	4.00	3.71

CALIB NASHYD (0011) ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	4.38	1.200	59.57	2.200	9.74	3.20	5.02
0.400	5.18	1.400	141.24	2.400	8.17	3.40	4.62
0.600	6.40	1.600	33.57	2.600	7.05	3.60	4.28
0.800	8.51	1.800	18.11	2.800	6.23	3.80	3.99
1.000	13.16	2.000	12.76	3.000	5.59	4.00	3.74

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.098 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 26.456
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.366

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

CALIB STANDHYD (0010) ID= 1 DT=12.0 min

Area (ha)= 3.87
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	141.24	63.75
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.93	0.23	1.159 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	55.67
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0012) ID= 1 DT=12.0 min

Area (ha)= 6.86
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	213.85	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	141.24	63.75
over	(min)	12.00	12.00
Storage Coeff.	(min)=	2.85 (ii)	8.43 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	1.63	0.38	2.005 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	55.67
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0064) ID= 1 DT=12.0 min

Area (ha)= 2.95
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	141.24	63.75
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.29	0.34	0.631 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	41.28
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.57

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0013) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	3.87	1.159	1.40	55.67
+ ID2= 2 (0011):	0.91	0.098	1.40	26.46
ID = 3 (0013):	4.78	1.257	1.40	50.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0013):	4.78	1.257	1.40	50.11
	+ ID2= 2 (0012):	6.86	2.005	1.40	55.67
	ID = 1 (0013):	11.64	3.263	1.40	53.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0013)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0013):	11.64	3.263	1.40	53.39
	+ ID2= 2 (0064):	2.95	0.631	1.40	41.28
	ID = 3 (0013):	14.59	3.894	1.40	50.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0021)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0013)	14.590	3.894	1.40	50.94
OUTFLOW: ID= 1 (0021)	14.590	0.625	1.80	50.92

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.05
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.4346

ROUTE PIPE (0031)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.62	1.80	50.92	0.35	1.91
OUTFLOW: ID= 1 (0031)	14.59	0.63	1.90	50.92	0.35	1.91

CALIB
NASHYD (0016)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19
Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.657 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 27.209
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.377

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

CALIB
STANDHYD (0018)
ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	141.24	63.75
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.24	0.05	0.297 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	56.87
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0017)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	141.24	63.75
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.50	0.16	0.667 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	53.27
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	6.53	0.657	1.40	27.21
	+ ID2= 2 (0017):	2.34	0.667	1.40	53.27

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          ID = 3 (0019):     8.87   1.325     1.40    34.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0019) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0019):     8.87   1.325     1.40    34.09
        + ID2= 2 (0018):     0.97   0.297     1.40    56.87
          ================================================
          ID = 1 (0019):     9.84   1.622     1.40    36.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0032) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0019):     9.84   1.622     1.40    36.33
        + ID2= 2 (0031):    14.59   0.626     1.90    50.92
          ================================================
          ID = 3 (0032):    24.43   1.915     1.40    45.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0022) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                           0.0000     0.0000    |   0.6510      0.4564
                           0.1220     0.0863    |   0.8770      0.7894
                           0.3620     0.1603    |   0.0000      0.0000

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0032)     24.430     1.915      1.40     45.04
     OUTFLOW: ID= 1 (0022)     24.430     0.567      3.30     45.04

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 29.59
                TIME SHIFT OF PEAK FLOW          (min)=114.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.3699

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--------------------
| CALIB            |
| NASHYD    (0023) |   Area     (ha)=  10.18   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   1.440

     PEAK FLOW       (cms)=   0.806 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  28.415
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.393

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

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--------------------
| CALIB            |
| NASHYD    (0025) |   Area     (ha)=   2.59   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.229 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  27.882
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.386

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

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| CALIB            |
| NASHYD    (0027) |   Area     (ha)=   1.61   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.183 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  23.392
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.324

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

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| CALIB            |
| STANDHYD  (0024) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.76          1.95
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     141.24         63.75
               over (min)       12.00         12.00
     Storage Coeff.  (min)=       0.88 (ii)     6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.87          0.30          2.170 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.40           1.40
     RUNOFF VOLUME    (mm)=      71.26         31.29          59.67
     TOTAL RAINFALL   (mm)=      72.26         72.26          72.26
     RUNOFF COEFFICIENT   =       0.99          0.43           0.83

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0062) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.24          0.61
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     141.24         63.75
               over (min)       12.00         12.00
     Storage Coeff.  (min)=       0.88 (ii)     6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.09          0.09          0.188 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.40           1.40
     RUNOFF VOLUME    (mm)=      71.26         31.29          42.48
     TOTAL RAINFALL   (mm)=      72.26         72.26          72.26
     RUNOFF COEFFICIENT   =       0.99          0.43           0.59

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
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ID1= 1 (0023):	10.18	0.806	1.60	28.42
+ ID2= 2 (0024):	6.71	2.170	1.40	59.67
ID = 3 (0028):	16.89	2.880	1.40	40.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) | 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	16.89	2.880	1.40	40.83
+ ID2= 2 (0025):	2.59	0.229	1.40	27.88
ID = 1 (0028):	19.48	3.109	1.40	39.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	19.48	3.109	1.40	39.11
+ ID2= 2 (0027):	1.61	0.183	1.40	23.39
ID = 3 (0028):	21.09	3.292	1.40	37.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) | 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	21.09	3.292	1.40	37.91
+ ID2= 2 (0062):	0.85	0.188	1.40	42.48
ID = 1 (0028):	21.94	3.480	1.40	38.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0029) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	24.43	0.567	3.30	45.04
+ ID2= 2 (0028):	21.94	3.480	1.40	38.09
ID = 3 (0029):	46.37	3.679	1.40	41.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.3030	1.3940
0.4380	0.4440	1.5000	1.8008
0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	3.679	1.40	41.75
OUTFLOW: ID= 1 (0030)	46.370	0.713	4.00	41.74

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.39
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.7212

CALIB | NASHYD (0005) | ID= 1 DT= 5.0 min

Area (ha)= 1.33 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.27	1.083	33.54	2.083	9.99	3.08	5.08
0.167	4.27	1.167	33.54	2.167	9.99	3.17	5.08
0.250	4.89	1.250	189.72	2.250	8.52	3.25	4.72
0.333	4.89	1.333	189.72	2.333	8.52	3.33	4.72
0.417	5.75	1.417	44.29	2.417	7.46	3.42	4.41
0.500	5.75	1.500	44.29	2.500	7.46	3.50	4.41
0.583	7.05	1.583	22.84	2.583	6.65	3.58	4.15
0.667	7.05	1.667	22.84	2.667	6.65	3.67	4.15
0.750	9.24	1.750	15.74	2.750	6.02	3.75	3.91
0.833	9.24	1.833	15.74	2.833	6.02	3.83	3.91
0.917	13.94	1.917	12.16	2.917	5.50	3.92	3.71
1.000	13.94	2.000	12.16	3.000	5.50	4.00	3.71

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.170 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 28.619
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.396

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

CALIB | STANDHYD (0004) | ID= 1 DT=12.0 min

Area (ha)= 1.45
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	4.38	1.200	59.57	2.200	9.74	3.20	5.02
0.400	5.18	1.400	141.24	2.400	8.17	3.40	4.62
0.600	6.40	1.600	33.57	2.600	7.05	3.60	4.28
0.800	8.51	1.800	18.11	2.800	6.23	3.80	3.99
1.000	13.16	2.000	12.76	3.000	5.59	4.00	3.74

Max.Eff.Inten.(mm/hr)=		141.24	63.75	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.88 (ii)	6.45 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.36	0.08	0.445 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	56.87
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB | STANDHYD (0063) | ID= 1 DT=12.0 min

Area (ha)= 3.62
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=	141.24	63.75		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.88 (ii)	6.45 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.40	0.40	0.800 (iii)	
TIME TO PEAK (hrs)=	1.40	1.40	1.40	
RUNOFF VOLUME (mm)=	71.26	31.29	42.48	
TOTAL RAINFALL (mm)=	72.26	72.26	72.26	
RUNOFF COEFFICIENT =	0.99	0.43	0.59	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.445	1.40	56.87
+ ID2= 2 (0005):	1.33	0.170	1.42	28.62
ID = 3 (0007):	2.78	0.588	1.42	43.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.588	1.42	43.34
+ ID2= 2 (0063):	3.62	0.800	1.40	42.48
ID = 1 (0007):	6.40	1.345	1.42	42.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3260	0.8017
0.0790	0.1850	0.3960	0.9004
0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0007)	6.400	1.345	1.42	42.86
OUTFLOW: ID= 1 (0033)	6.400	0.090	2.75	42.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.68
TIME SHIFT OF PEAK FLOW (min)= 80.00
MAXIMUM STORAGE USED (ha.m.)= 0.2004

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0033)	6.40	0.09	2.75	42.77	0.13	0.97
OUTFLOW: ID= 1 (0034)	6.40	0.09	2.92	42.76	0.13	0.96

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.711 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 27.882
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.386

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 0.862 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 28.154
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.390

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.169 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 28.343
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.392

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	10.97	7.01
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	141.24	63.75
over (min)	12.00	12.00
Storage Coeff. (min)=	0.88 (ii)	6.45 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12
		TOTALS

PEAK FLOW	(cms)=	4.30	1.08	5.386 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	55.67
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039) | Area (ha)= 1.21
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		141.24	63.75	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.26	0.08	0.345 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	53.27
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.35	1.40	53.27
MAJOR SYS.(ID= 2):	0.24	0.18	1.40	53.27
MINOR SYS.(ID= 3):	0.97	0.17	1.40	53.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0047) | Area (ha)= 1.50
ID= 1 DT=12.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		141.24	63.75	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	0.88 (ii)	6.45 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.38	0.08	0.460 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	71.26	31.29	56.87
TOTAL RAINFALL	(mm)=	72.26	72.26	72.26
RUNOFF COEFFICIENT	=	0.99	0.43	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0072)
Inlet Cap.=0.363
#of Inlets= 1
Total(cms)= 0.4

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.46	1.40	56.87
MAJOR SYS.(ID= 2):	0.12	0.10	1.40	56.87
MINOR SYS.(ID= 3):	1.38	0.36	1.40	56.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	8.03	0.711	1.40	27.88
+ ID2= 2 (0036):	17.98	5.386	1.40	55.67
ID = 3 (0040):	26.01	6.097	1.40	47.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	26.01	6.097	1.40	47.09
+ ID2= 2 (0037):	10.64	0.862	1.60	28.15
ID = 1 (0040):	36.65	6.956	1.40	41.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	36.65	6.956	1.40	41.59
+ ID2= 2 (0038):	2.11	0.169	1.60	28.34
ID = 3 (0040):	38.76	7.110	1.40	40.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0040):	38.76	7.110	1.40	40.87
+ ID2= 2 (0072):	0.12	0.097	1.40	56.87
ID = 1 (0040):	38.88	7.207	1.40	40.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0040)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	38.88	7.207	1.40	40.92
+ ID2= 2 (0074):	0.24	0.176	1.40	53.27
ID = 3 (0040):	39.12	7.383	1.40	41.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0041) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0034):     6.40   0.089     2.92     42.76
        + ID2= 2 (0040):    39.12   7.383     1.40     41.00
          ================================================
          ID = 3 (0041):    45.52   7.051     1.42     41.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0043) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------        (cms)     (ha.m.)   |     (cms)     (ha.m.)
                           0.0000     0.0000    |    3.1150      0.9004
                           1.2740     0.5550    |    3.6250      1.1600
                           2.2650     0.7154    |    3.9640      1.3570

                                AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0041)     45.521     7.051      1.42      41.26
     OUTFLOW: ID= 1 (0043)     45.521     2.327      1.75      41.25

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 33.01
                    TIME SHIFT OF PEAK FLOW          (min)= 20.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.7294

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--------------------
| CALIB            |
| NASHYD    (0044) |   Area     (ha)=   3.28   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.319 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  18.235
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.252

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

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--------------------
| CALIB            |
| NASHYD    (0046) |   Area     (ha)=   2.21   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.23

     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.187 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  28.031
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.388

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

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--------------------
| CALIB            |
| STANDHYD  (0045) |   Area     (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      6.71         3.45
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    141.24        63.75
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     2.63         0.53          3.164 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=    71.26        31.29          57.67
     TOTAL RAINFALL   (mm)=    72.26        72.26          72.26
     RUNOFF COEFFICIENT   =     0.99         0.43           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0059) |   Area     (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.86         0.41
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    141.24        63.75
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.34         0.06          0.402 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=    71.26        31.29          58.46
     TOTAL RAINFALL   (mm)=    72.26        72.26          72.26
     RUNOFF COEFFICIENT   =     0.99         0.43           0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0069) |
| Inlet Cap.=0.320 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):    1.27      0.40      1.40    58.46
     ================================================
     MAJOR SYS.(ID= 2):    0.10      0.08      1.40    58.46
     MINOR SYS.(ID= 3):    1.17      0.32      1.40    58.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0070) |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.38         1.12
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    141.24        63.75
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.54         0.17          0.713 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=    71.26        31.29          53.27
     TOTAL RAINFALL   (mm)=    72.26        72.26          72.26
     RUNOFF COEFFICIENT   =     0.99         0.43           0.74
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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0071)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.550		(ha)	(cms)	(hrs)	(mm)
#of Inlets= 1	TOTAL HYD.(ID= 1):	2.50	0.71	1.40	53.27
Total(cms)= 0.6	MAJOR SYS.(ID= 2):	0.22	0.16	1.40	53.27
	MINOR SYS.(ID= 3):	2.28	0.55	1.40	53.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0044):	3.28	0.319	1.40	18.24
	+ ID2= 2 (0045):	10.16	3.164	1.40	57.67
	ID = 3 (0048):	13.44	3.483	1.40	48.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	13.44	3.483	1.40	48.05
	+ ID2= 2 (0046):	2.21	0.187	1.40	28.03
	ID = 1 (0048):	15.65	3.670	1.40	45.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	15.65	3.670	1.40	45.22
	+ ID2= 2 (0069):	1.17	0.320	1.40	58.46
	ID = 3 (0048):	16.82	3.990	1.40	46.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	16.82	3.990	1.40	46.14
	+ ID2= 2 (0071):	2.28	0.550	1.40	53.27
	ID = 1 (0048):	19.10	4.540	1.40	46.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0048):	19.10	4.540	1.40	46.99
	+ ID2= 2 (0072):	1.38	0.363	1.40	56.87
	ID = 3 (0048):	20.48	4.903	1.40	47.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0049)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	0.9630	0.3823
DT= 5.0 min	0.5430	0.1233	1.3030	0.6907
	0.7650	0.2343	1.5860	1.0977

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0048)	20.476	4.903	1.40	47.66
OUTFLOW: ID= 1 (0049)	20.476	1.065	1.80	47.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.72
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.4779

ROUTE PIPE (0050)		
IN= 2---> OUT= 1	Pipe Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 467.00
	Slope	(m/m)= 0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0049)	20.48	1.06	1.80	47.65	0.43	2.38
OUTFLOW: ID= 1 (0050)	20.48	1.07	1.80	47.65	0.43	2.38

CALIB					
NASHYD (0054)	Area	(ha)= 1.34	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)= 0.22		

Unit Hyd Qpeak (cms)= 0.233

PEAK FLOW (cms)= 0.119 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 27.882
TOTAL RAINFALL (mm)= 72.259
RUNOFF COEFFICIENT = 0.386

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

CALIB					
NASHYD (0056)	Area	(ha)= 0.10	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)= 0.05		

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 2.486

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     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.034

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

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-------------------
| CALIB           |
| NASHYD    (0058)|   Area     (ha)=   2.51   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.355

     PEAK FLOW       (cms)=   0.199 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  28.415
     TOTAL RAINFALL   (mm)=  72.259
     RUNOFF COEFFICIENT   =   0.393

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

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-------------------
| CALIB           |
| STANDHYD  (0057)|   Area     (ha)=   0.47
|ID= 1 DT=12.0 min|   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.33         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     141.24        63.75
           over (min)            12.00        12.00
     Storage Coeff.  (min)=       0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.02          0.151 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      71.26        31.29         59.26
     TOTAL RAINFALL   (mm)=      72.26        72.26         72.26
     RUNOFF COEFFICIENT   =       0.99         0.43          0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0073)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0057):     0.47   0.151     1.40    59.26
        + ID2= 2 (0058):     2.51   0.199     1.60    28.42
          ================================================
          ID = 3 (0073):     2.98   0.326     1.40    33.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| DUHYD     (0066)|
| Inlet Cap.=0.181|
| #of Inlets=    1|
| Total(cms)=  0.2|       AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.98      0.33      1.40   33.28
     ================================================
     MAJOR SYS.(ID= 2):   0.44      0.15      1.40   33.28
     MINOR SYS.(ID= 3):   2.54      0.18      1.40   33.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0053)|   Area     (ha)=   5.86
|ID= 1 DT=12.0 min|   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     141.24        63.75
           over (min)            12.00        12.00
     Storage Coeff.  (min)=       0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.29         0.40          1.686 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      71.26        31.29         53.67
     TOTAL RAINFALL   (mm)=      72.26        72.26         72.26
     RUNOFF COEFFICIENT   =       0.99         0.43          0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0055)|   Area     (ha)=   2.71
|ID= 1 DT=12.0 min|   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     141.24        63.75
           over (min)            12.00        12.00
     Storage Coeff.  (min)=       0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.27         0.31          0.580 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      71.26        31.29         41.28
     TOTAL RAINFALL   (mm)=      72.26        72.26         72.26
     RUNOFF COEFFICIENT   =       0.99         0.43          0.57

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0065)|   Area     (ha)=   2.71
|ID= 1 DT=12.0 min|   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     141.24        63.75
           over (min)            12.00        12.00
     Storage Coeff.  (min)=       0.88 (ii)    6.45 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.27         0.31          0.580 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      71.26        31.29         41.28
     TOTAL RAINFALL   (mm)=      72.26        72.26         72.26
     RUNOFF COEFFICIENT   =       0.99         0.43          0.57
```

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0053):		5.86	1.686	1.40	53.67
+ ID2= 2 (0054):		1.34	0.119	1.40	27.88
ID = 3 (0051):		7.20	1.804	1.40	48.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		7.20	1.804	1.40	48.87
+ ID2= 2 (0055):		2.71	0.580	1.40	41.28
ID = 1 (0051):		9.91	2.384	1.40	46.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0051):		9.91	2.384	1.40	46.80
+ ID2= 2 (0056):		0.10	0.001	1.40	2.49
ID = 3 (0051):		10.01	2.385	1.40	46.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		10.01	2.385	1.40	46.35
+ ID2= 2 (0065):		2.71	0.580	1.40	41.28
ID = 1 (0051):		12.72	2.965	1.40	45.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0051):		12.72	2.965	1.40	45.27
+ ID2= 2 (0066):		2.54	0.181	1.40	33.28
ID = 3 (0051):		15.26	3.146	1.40	43.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		15.26	3.146	1.40	43.28
+ ID2= 2 (0069):		0.10	0.082	1.40	58.46
ID = 1 (0051):		15.36	3.227	1.40	43.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0060)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0050):		20.48	1.067	1.80	47.65
+ ID2= 2 (0051):		15.36	3.227	1.40	43.38
ID = 3 (0060):		35.84	3.987	1.40	45.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0061)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5100	0.3577
0.2970	0.1233	0.6800	0.7154
0.4250	0.2220	0.7930	1.1964

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0060)	35.837	3.987	1.40	45.82
OUTFLOW: ID= 1 (0061)	35.837	0.713	3.70	45.82

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.87
TIME SHIFT OF PEAK FLOW (min)=138.00
MAXIMUM STORAGE USED (ha.m.)= 0.8543

****
** SIMULATION NUMBER: 6 **
****

CHICAGO STORM
Ptotal= 78.03 mm

IDF curve parameters: A=1770.000
B= 4.000
C= 0.820
used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.34	1.17	38.21	2.17	10.60	3.17	5.19
0.33	5.00	1.33	203.31	2.33	8.96	3.33	4.81
0.50	5.92	1.50	50.96	2.50	7.78	3.50	4.48
0.67	7.33	1.67	25.51	2.67	6.90	3.67	4.20
0.83	9.77	1.83	17.18	2.83	6.21	3.83	3.96
1.00	15.10	2.00	13.06	3.00	5.65	4.00	3.74

CALIB
NASHYD (0011)
ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	4.45	1.200	65.72	2.200	10.32	3.20	5.13
0.400	5.30	1.400	152.52	2.400	8.56	3.40	4.70
0.600	6.63	1.600	38.23	2.600	7.34	3.60	4.34
0.800	8.95	1.800	19.96	2.800	6.44	3.80	4.04
1.000	14.21	2.000	13.75	3.000	5.74	4.00	3.78

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.113 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 30.080
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.386

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

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------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0010)   |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min   |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      2.36         1.51
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    152.52        72.37
                over (min)     12.00        12.00
     Storage Coeff.  (min)=      0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=      1.00         0.27          1.268 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=     77.03        35.33          60.76
     TOTAL RAINFALL   (mm)=     78.03        78.03          78.03
     RUNOFF COEFFICIENT   =      0.99         0.45           0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0012)   |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min   |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.18         2.68
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=    213.85        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    152.52        72.37
                over (min)     12.00        12.00
     Storage Coeff.  (min)=      2.77 (ii)    8.06 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=      1.76         0.44          2.197 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=     77.03        35.33          60.76
     TOTAL RAINFALL   (mm)=     78.03        78.03          78.03
     RUNOFF COEFFICIENT   =      0.99         0.45           0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD  (0064)   |   Area     (ha)=   2.95
|ID= 1 DT=12.0 min   |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.74         2.21
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    152.52        72.37
                over (min)     12.00        12.00
     Storage Coeff.  (min)=      0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                          *TOTALS*
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     PEAK FLOW       (cms)=      0.31         0.39          0.706 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=     77.03        35.33          45.75
     TOTAL RAINFALL   (mm)=     78.03        78.03          78.03
     RUNOFF COEFFICIENT   =      0.99         0.45           0.59

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0013) |
|  1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0010):     3.87   1.268     1.40    60.76
        + ID2= 2 (0011):     0.91   0.113     1.40    30.08
          ===============================================
          ID = 3 (0013):     4.78   1.381     1.40    54.92

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0013) |
|  3 +  2 =  1     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0013):     4.78   1.381     1.40    54.92
        + ID2= 2 (0012):     6.86   2.197     1.40    60.76
          ===============================================
          ID = 1 (0013):    11.64   3.578     1.40    58.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| ADD HYD   (0013) |
|  1 +  2 =  3     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0013):    11.64   3.578     1.40    58.37
        + ID2= 2 (0064):     2.95   0.706     1.40    45.75
          ===============================================
          ID = 3 (0013):    14.59   4.284     1.40    55.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
| RESERVOIR (0021) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |    OUTFLOW    STORAGE   |   OUTFLOW    STORAGE
--------------------     (cms)     (ha.m.)   |    (cms)     (ha.m.)
                         0.0000     0.0000   |    0.6510     0.4563
                         0.1220     0.1110   |    0.8770     0.7650
                         0.3620     0.2096   |    0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0013)     14.590     4.284     1.40      55.81
     OUTFLOW: ID= 1 (0021)     14.590     0.671     1.80      55.80

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.66
                  TIME SHIFT OF PEAK FLOW         (min)= 24.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4844

------------------------------------------------------------------------------
--------------------
| ROUTE PIPE (0031)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 500.00
--------------------     Slope       (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE -------------------->
       DEPTH       VOLUME    FLOW RATE    VELOCITY     TRAV.TIME
        (m)       (cu.m.)      (cms)        (m/s)         min
        0.09      .216E+02      0.0          0.80         10.40
        0.17      .600E+02      0.1          1.25          6.67
        0.26      .108E+03      0.3          1.61          5.18
```

0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0021)	14.59	0.67	1.80	55.80	0.36	1.94
OUTFLOW: ID= 1 (0031)	14.59	0.67	1.90	55.80	0.36	1.94

CALIB					
NASHYD (0016)	Area	(ha)= 6.53	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.19			

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.756 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 30.937
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.396

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

CALIB					
STANDHYD (0018)	Area	(ha)= 0.97			
ID= 1 DT=12.0 min	Total Imp	(%)= 64.00	Dir. Conn.	(%)= 64.00	

		IMPERVIOUS	PERVIOUS (i)	*TOTALS*
Surface Area	(ha)=	0.62	0.35	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	152.52	72.37	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
PEAK FLOW	(cms)=	0.26	0.06	0.325 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	62.01
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0017)	Area	(ha)= 2.34			
ID= 1 DT=12.0 min	Total Imp	(%)= 55.00	Dir. Conn.	(%)= 55.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

				TOTALS
Max.Eff.Inten.	(mm/hr)=	152.52	72.37	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
PEAK FLOW	(cms)=	0.55	0.19	0.732 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	58.26
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	6.53	0.756	1.40	30.94
	+ ID2= 2 (0017):	2.34	0.732	1.40	58.26
	ID = 3 (0019):	8.87	1.489	1.40	38.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0019):	8.87	1.489	1.40	38.15
	+ ID2= 2 (0018):	0.97	0.325	1.40	62.01
	ID = 1 (0019):	9.84	1.814	1.40	40.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0019):	9.84	1.814	1.40	40.50
	+ ID2= 2 (0031):	14.59	0.671	1.90	55.80
	ID = 3 (0032):	24.43	2.146	1.40	49.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0022)					
IN= 2---> OUT= 1					
DT= 5.0 min		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
		0.0000	0.0000	0.6510	0.4564
		0.1220	0.0863	0.8770	0.7894
		0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0032)	24.430	2.146	1.40	49.64
OUTFLOW: ID= 1 (0022)	24.430	0.612	3.30	49.63

PEAK FLOW REDUCTION [Qout/Qin](%)= 28.52
TIME SHIFT OF PEAK FLOW (min)=114.00
MAXIMUM STORAGE USED (ha.m.)= 0.4167

CALIB					
NASHYD (0023)	Area	(ha)= 10.18	Curve Number	(CN)= 74.0	
ID= 1 DT=12.0 min	Ia	(mm)= 5.00	# of Linear Res.	(N)= 3.00	
	U.H. Tp	(hrs)= 0.27			

Unit Hyd Qpeak (cms)= 1.440

```
     PEAK FLOW       (cms)=   0.936 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  32.308
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.414

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

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--------------------
| CALIB            |
| NASHYD    (0025) |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.264 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  31.701
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.406

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

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--------------------
| CALIB            |
| NASHYD    (0027) |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.209 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  26.596
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.341

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

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--------------------
| CALIB            |
| STANDHYD  (0024) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.76         1.95
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    152.52        72.37
           over (min)          12.00        12.00
     Storage Coeff.  (min)=     0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     2.02         0.35      2.364 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=    77.03        35.33      64.93
     TOTAL RAINFALL   (mm)=    78.03        78.03      78.03
     RUNOFF COEFFICIENT   =     0.99         0.45       0.83

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0062) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.24         0.61
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    152.52        72.37
           over (min)          12.00        12.00
     Storage Coeff.  (min)=     0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.10         0.11      0.210 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.40       1.40
     RUNOFF VOLUME    (mm)=    77.03        35.33      46.99
     TOTAL RAINFALL   (mm)=    78.03        78.03      78.03
     RUNOFF COEFFICIENT   =     0.99         0.45       0.60

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0023):    10.18    0.936     1.60    32.31
       + ID2= 2 (0024):     6.71    2.364     1.40    64.93
         ================================================
         ID = 3 (0028):    16.89    3.185     1.40    45.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0028):    16.89    3.185     1.40    45.27
       + ID2= 2 (0025):     2.59    0.264     1.40    31.70
         ================================================
         ID = 1 (0028):    19.48    3.449     1.40    43.47

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0028):    19.48    3.449     1.40    43.47
       + ID2= 2 (0027):     1.61    0.209     1.40    26.60
         ================================================
         ID = 3 (0028):    21.09    3.658     1.40    42.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0028) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0028):    21.09    3.658     1.40    42.18
       + ID2= 2 (0062):     0.85    0.210     1.40    46.99
         ================================================
         ID = 1 (0028):    21.94    3.868     1.40    42.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0029) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0022):    24.43    0.612     3.30    49.63
       + ID2= 2 (0028):    21.94    3.868     1.40    42.36
         ================================================
         ID = 3 (0029):    46.37    4.109     1.40    46.19
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0030) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.3030	1.3940
	0.4380	0.4440	1.5000	1.8008
	0.9910	1.0000	1.7560	2.3930

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0029)	46.370	4.109	1.40	46.19
OUTFLOW: ID= 1 (0030)	46.370	0.781	4.00	46.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.01
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.7889

CALIB NASHYD (0005) ID= 1 DT= 5.0 min | Area (ha)= 1.33 | Curve Number (CN)= 74.0 | Ia (mm)= 5.00 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.34	1.083	38.21	2.083	10.60	3.08	5.19
0.167	4.34	1.167	38.21	2.167	10.60	3.17	5.19
0.250	5.00	1.250	203.31	2.250	8.96	3.25	4.81
0.333	5.00	1.333	203.31	2.333	8.96	3.33	4.81
0.417	5.92	1.417	50.96	2.417	7.78	3.42	4.48
0.500	5.92	1.500	50.96	2.500	7.78	3.50	4.48
0.583	7.33	1.583	25.51	2.583	6.90	3.58	4.20
0.667	7.33	1.667	25.51	2.667	6.90	3.67	4.20
0.750	9.77	1.750	17.18	2.750	6.21	3.75	3.96
0.833	9.77	1.833	17.18	2.833	6.21	3.83	3.96
0.917	15.10	1.917	13.06	2.917	5.65	3.92	3.74
1.000	15.10	2.000	13.06	3.000	5.65	4.00	3.74

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.196 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 32.539
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.417

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

CALIB STANDHYD (0004) ID= 1 DT=12.0 min | Area (ha)= 1.45 | Total Imp(%)= 64.00 | Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.93	0.52
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	4.45	1.200	65.72	2.200	10.32	3.20	5.13
0.400	5.30	1.400	152.52	2.400	8.56	3.40	4.70
0.600	6.63	1.600	38.23	2.600	7.34	3.60	4.34
0.800	8.95	1.800	19.96	2.800	6.44	3.80	4.04
1.000	14.21	2.000	13.75	3.000	5.74	4.00	3.78

Max.Eff.Inten.(mm/hr)=	152.52	72.37
over (min)	12.00	12.00
Storage Coeff. (min)=	0.85 (ii)	6.15 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

			TOTALS
PEAK FLOW (cms)=	0.39	0.09	0.486 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	77.03	35.33	62.01
TOTAL RAINFALL (mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT =	0.99	0.45	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0063) ID= 1 DT=12.0 min | Area (ha)= 3.62 | Total Imp(%)= 28.00 | Dir. Conn.(%)= 28.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.01	2.61
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	152.52	72.37
over (min)	12.00	12.00
Storage Coeff. (min)=	0.85 (ii)	6.15 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.12

		TOTALS
PEAK FLOW (cms)=	0.43	0.46	0.893 (iii)
TIME TO PEAK (hrs)=	1.40	1.40	1.40
RUNOFF VOLUME (mm)=	77.03	35.33	47.00
TOTAL RAINFALL (mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT =	0.99	0.45	0.60

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0007) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0004):	1.45	0.486	1.40	62.01
+ ID2= 2 (0005):	1.33	0.196	1.42	32.54
ID = 3 (0007):	2.78	0.653	1.42	47.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0007) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0007):	2.78	0.653	1.42	47.90
+ ID2= 2 (0063):	3.62	0.893	1.40	47.00
ID = 1 (0007):	6.40	1.498	1.42	47.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0033) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0007)	6.400	1.498	1.42	47.40
OUTFLOW: ID= 1 (0033)	6.400	0.105	2.58	47.31

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.00
TIME SHIFT OF PEAK FLOW (min)= 70.00
MAXIMUM STORAGE USED (ha.m.)= 0.2216

ROUTE PIPE (0034)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 850.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
	<---- hydrograph ---->				<--pipe / channel->	
INFLOW : ID= 2 (0033)	6.40	0.10	2.58	47.31	0.14	1.03
OUTFLOW: ID= 1 (0034)	6.40	0.10	2.83	47.30	0.14	1.02

CALIB
NASHYD (0035)
ID= 1 DT=12.0 min

Area (ha)= 8.03 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 1.394

PEAK FLOW (cms)= 0.820 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 31.701
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.406

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

CALIB
NASHYD (0037)
ID= 1 DT=12.0 min

Area (ha)= 10.64 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.24

Unit Hyd Qpeak (cms)= 1.693

PEAK FLOW (cms)= 1.001 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 32.011
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.410

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

CALIB
NASHYD (0038)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.196 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 32.225
TOTAL RAINFALL (mm)= 78.027
RUNOFF COEFFICIENT = 0.413

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

CALIB
STANDHYD (0036)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	152.52	72.37	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	4.65	1.25	5.893 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	60.76
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0039)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	152.52	72.37	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.28	0.10	0.379 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	58.26
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0074)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.38	1.40	58.26
MAJOR SYS.(ID= 2):	0.26	0.21	1.40	58.26

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     MINOR SYS.(ID= 3):   0.95      0.17      1.40   58.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB             |
| STANDHYD  (0047)  |   Area    (ha)=   1.50
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.96         0.54
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n          =       0.013        0.250

     Max.Eff.Inten.(mm/hr)=     152.52        72.37
           over (min)           12.00        12.00
     Storage Coeff.  (min)=       0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.41         0.10          0.503 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      77.03        35.33         62.01
     TOTAL RAINFALL   (mm)=      78.03        78.03         78.03
     RUNOFF COEFFICIENT   =       0.99         0.45          0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0072)  |
| Inlet Cap.=0.363  |
| #of Inlets=    1  |
| Total(cms)=  0.4  |       AREA     QPEAK     TPEAK     R.V.
-------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.50      0.50      1.40    62.01
     ================================================
     MAJOR SYS.(ID= 2):   0.16      0.14      1.40    62.01
     MINOR SYS.(ID= 3):   1.34      0.36      1.40    62.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0035):      8.03    0.820     1.40    31.70
        + ID2= 2 (0036):     17.98    5.893     1.40    60.76
          ================================================
          ID = 3 (0040):     26.01    6.713     1.40    51.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0040):     26.01    6.713     1.40    51.79
        + ID2= 2 (0037):     10.64    1.001     1.60    32.01
          ================================================
          ID = 1 (0040):     36.65    7.703     1.40    46.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0040):     36.65    7.703     1.40    46.05
        + ID2= 2 (0038):      2.11    0.196     1.60    32.23
          ================================================
          ID = 3 (0040):     38.76    7.882     1.40    45.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0040):     38.76    7.882     1.40    45.30
        + ID2= 2 (0072):      0.16    0.140     1.40    62.01
          ================================================
          ID = 1 (0040):     38.92    8.021     1.40    45.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0040)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0040):     38.92    8.021     1.40    45.37
        + ID2= 2 (0074):      0.26    0.210     1.40    58.26
          ================================================
          ID = 3 (0040):     39.18    8.231     1.40    45.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0041)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0034):      6.40    0.104     2.83    47.30
        + ID2= 2 (0040):     39.18    8.231     1.40    45.45
          ================================================
          ID = 3 (0041):     45.58    7.871     1.42    45.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0043)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   3.1150      0.9004
                          1.2740     0.5550    |   3.6250      1.1600
                          2.2650     0.7154    |   3.9640      1.3570

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0041)     45.581     7.871      1.42      45.72
     OUTFLOW: ID= 1 (0043)     45.581     2.684      1.75      45.72

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 34.10
               TIME SHIFT OF PEAK FLOW          (min)= 20.00
               MAXIMUM  STORAGE   USED        (ha.m.)=  0.8074

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD    (0044)  |   Area    (ha)=   3.28   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.10

     Unit Hyd Qpeak  (cms)=   1.253

     PEAK FLOW       (cms)=   0.365 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  20.733
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.266

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

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-------------------
| CALIB             |
| NASHYD    (0046)  |   Area    (ha)=   2.21   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.23
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```
     Unit Hyd Qpeak  (cms)=   0.367

     PEAK FLOW       (cms)=   0.216 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  31.870
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.408

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

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-------------------
| CALIB           |
| STANDHYD  (0045)|   Area     (ha)=  10.16
|ID= 1 DT=12.0 min|   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.71         3.45
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     152.52        72.37
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       2.84         0.61         3.455 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      77.03        35.33         62.85
     TOTAL RAINFALL   (mm)=      78.03        78.03         78.03
     RUNOFF COEFFICIENT   =       0.99         0.45          0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0059)|   Area     (ha)=   1.27
|ID= 1 DT=12.0 min|   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.86         0.41
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     152.52        72.37
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.37         0.07         0.438 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      77.03        35.33         63.68
     TOTAL RAINFALL   (mm)=      78.03        78.03         78.03
     RUNOFF COEFFICIENT   =       0.99         0.45          0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0069)|
| Inlet Cap.=0.320|
| #of Inlets=   1 |
| Total(cms)=  0.3|      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.27      0.44      1.40   63.68
     ======================================================
     MAJOR SYS.(ID= 2):   0.13      0.12      1.40   63.68
     MINOR SYS.(ID= 3):   1.14      0.32      1.40   63.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0070)|   Area     (ha)=   2.50
|ID= 1 DT=12.0 min|   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38         1.12
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     152.52        72.37
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.85 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.58         0.20         0.783 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40          1.40
     RUNOFF VOLUME    (mm)=      77.03        35.33         58.26
     TOTAL RAINFALL   (mm)=      78.03        78.03         78.03
     RUNOFF COEFFICIENT   =       0.99         0.45          0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0071)|
| Inlet Cap.=0.550|
| #of Inlets=   1 |
| Total(cms)=  0.6|      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.50      0.78      1.40   58.26
     ======================================================
     MAJOR SYS.(ID= 2):   0.29      0.23      1.40   58.26
     MINOR SYS.(ID= 3):   2.21      0.55      1.40   58.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0048)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0044):     3.28   0.365     1.40    20.73
        + ID2= 2 (0045):    10.16   3.455     1.40    62.85
          ================================================
          ID = 3 (0048):    13.44   3.821     1.40    52.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0048)|
|   3 +  2 =  1   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0048):    13.44   3.821     1.40    52.57
        + ID2= 2 (0046):     2.21   0.216     1.40    31.87
          ================================================
          ID = 1 (0048):    15.65   4.036     1.40    49.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0048)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0048):    15.65   4.036     1.40    49.65
        + ID2= 2 (0069):     1.14   0.320     1.40    63.68
          ================================================
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        ID = 3 (0048):    16.79   4.356     1.40    50.60

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0048) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0048):    16.79   4.356     1.40    50.60
        + ID2= 2 (0071):     2.21   0.550     1.40    58.26
          ================================================
          ID = 1 (0048):    19.00   4.906     1.40    51.49

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

-------------------
| ADD HYD   (0048) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0048):    19.00   4.906     1.40    51.49
        + ID2= 2 (0072):     1.34   0.363     1.40    62.01
          ================================================
          ID = 3 (0048):    20.34   5.269     1.40    52.18

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0049) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.9630     0.3823
                         0.5430     0.1233     |   1.3030     0.6907
                         0.7650     0.2343     |   1.5860     1.0977

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)      (hrs)      (mm)
     INFLOW : ID= 2 (0048)     20.337     5.269      1.40     52.18
     OUTFLOW: ID= 1 (0049)     20.337     1.126      1.80     52.18

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 21.36
                   TIME SHIFT OF PEAK FLOW          (min)= 24.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  0.5321

--------------------------------------------------------------------------------
-------------------
| ROUTE PIPE (0050)|     PIPE Number     =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 467.00
-------------------      Slope      (m/m)=  0.006
                         Manning n       =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE    VELOCITY    TRAV.TIME
         (m)      (cu.m.)       (cms)        (m/s)        min
        0.09     .201E+02        0.0         0.88         8.87
        0.17     .560E+02        0.2         1.37         5.68
        0.26     .101E+03        0.4         1.76         4.42
        0.35     .153E+03        0.7         2.09         3.72
        0.43     .210E+03        1.1         2.38         3.27
        0.52     .270E+03        1.5         2.64         2.95
        0.61     .334E+03        2.0         2.86         2.72
        0.69     .399E+03        2.6         3.06         2.55
        0.78     .466E+03        3.2         3.23         2.41
        0.87     .533E+03        3.9         3.38         2.31
        0.96     .599E+03        4.5         3.50         2.22
        1.04     .665E+03        5.1         3.60         2.16
        1.13     .728E+03        5.7         3.68         2.11
        1.22     .789E+03        6.3         3.74         2.08
        1.30     .846E+03        6.8         3.76         2.07
        1.39     .897E+03        7.2         3.76         2.07
        1.48     .943E+03        7.5         3.72         2.09
        1.56     .978E+03        7.6         3.63         2.15
        1.65     .999E+03        7.1         3.30         2.36
                                <---- hydrograph ---->   <-pipe / channel->
                              AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                              (ha)    (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0049)   20.34     1.13     1.80  52.18      0.44      2.41
     OUTFLOW: ID= 1 (0050)   20.34     1.13     1.80  52.18      0.44      2.41
```

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--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0054) |   Area     (ha)=   1.34   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.233

     PEAK FLOW       (cms)=   0.137 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  31.701
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.406

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0056) |   Area     (ha)=   0.10   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.05

     Unit Hyd Qpeak  (cms)=   0.076

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   2.826
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.036

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD    (0058) |   Area     (ha)=   2.51   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.355

     PEAK FLOW       (cms)=   0.231 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=  32.308
     TOTAL RAINFALL   (mm)=  78.027
     RUNOFF COEFFICIENT   =   0.414

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| STANDHYD  (0057) |   Area     (ha)=   0.47
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.33          0.14
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      152.52         72.37
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.85 (ii)     6.15 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.14          0.03       0.164 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40        1.40
     RUNOFF VOLUME    (mm)=       77.03         35.33       64.51
     TOTAL RAINFALL   (mm)=       78.03         78.03       78.03
     RUNOFF COEFFICIENT   =        0.99          0.45        0.83

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
```

ADD HYD (0073)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0057):		0.47	0.164	1.40	64.51
+ ID2= 2 (0058):		2.51	0.231	1.60	32.31
ID = 3 (0073):		2.98	0.367	1.40	37.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0066)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.181					
#of Inlets= 1					
Total(cms)= 0.2		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		2.98	0.37	1.40	37.39
MAJOR SYS.(ID= 2):		0.57	0.19	1.40	37.39
MINOR SYS.(ID= 3):		2.41	0.18	1.40	37.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0053)	Area (ha)= 5.86			
ID= 1 DT=12.0 min	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00		

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		152.52	72.37	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.39	0.46	1.849 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	58.68
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0055)	Area (ha)= 2.71			
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00		

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		152.52	72.37	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.29	0.36	0.648 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	45.75
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0065)	Area (ha)= 2.71			
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00		

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		152.52	72.37	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.85 (ii)	6.15 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.29	0.36	0.648 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	77.03	35.33	45.75
TOTAL RAINFALL	(mm)=	78.03	78.03	78.03
RUNOFF COEFFICIENT	=	0.99	0.45	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0053):		5.86	1.849	1.40	58.68
+ ID2= 2 (0054):		1.34	0.137	1.40	31.70
ID = 3 (0051):		7.20	1.985	1.40	53.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		7.20	1.985	1.40	53.66
+ ID2= 2 (0055):		2.71	0.648	1.40	45.75
ID = 1 (0051):		9.91	2.634	1.40	51.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0051):		9.91	2.634	1.40	51.50
+ ID2= 2 (0056):		0.10	0.002	1.40	2.83
ID = 3 (0051):		10.01	2.635	1.40	51.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0051)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0051):		10.01	2.635	1.40	51.01
+ ID2= 2 (0065):		2.71	0.648	1.40	45.75

```
          ID = 1 (0051):    12.72   3.284     1.40    49.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD   (0051) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0051):    12.72   3.284     1.40    49.89
        + ID2= 2 (0066):     2.41   0.181     1.40    37.39
          ================================================
          ID = 3 (0051):    15.13   3.465     1.40    47.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD   (0051) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0051):    15.13   3.465     1.40    47.90
        + ID2= 2 (0069):     0.13   0.118     1.40    63.68
          ================================================
          ID = 1 (0051):    15.26   3.583     1.40    48.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
| ADD HYD   (0060) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0050):    20.34   1.126     1.80    52.18
        + ID2= 2 (0051):    15.26   3.583     1.40    48.04
          ================================================
          ID = 3 (0060):    35.60   4.381     1.40    50.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0061) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.5100      0.3577
                         0.2970     0.1233    |  0.6800      0.7154
                         0.4250     0.2220    |  0.7930      1.1964

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0060)     35.599     4.381      1.40      50.40
     OUTFLOW: ID= 1 (0061)     35.599     0.736      3.90      50.40

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.81
                   TIME SHIFT OF PEAK FLOW        (min)=150.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.9556

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 FINISH
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APPENDIX E
Post-Development Input Parameters

COLE ENGINEERING

Post-Development (OTTHYMO)
Nashyd Input Parameters
Glenway Estates
File No. L09-301
Date: July 2013

Parameter	Unit	Description	4-ex2.3	4-ex1.1	4.3	4.5	6-ex3.3	6.4
Area	ha	Watershed Area	0.91	6.53	2.59	1.61	1.33	2.11
TP	hr	Unit Hydrograph Time to Peak	0.17	0.19	0.22	0.13	0.13	0.26
DT	min	Time Step Increment	12					
DWF	cms	Dry Weather Flow (Base Flow)	0					
CN*	-	Modified SCS Curve Number	74**					
IA	mm	Initial Abstraction	5					
N	-	Number of Linear Reservior	3					
Rain	mm/hr	Optional Rainfall Intensities	0-Without Rainfall					

**** Note: Based on clay loam soil (Type C) determined from a soils map of York County (Soil Surveys Ontario). CN value of 74 was determined with MTO Design Charts 1.08 and 1.09 for pasture land use under good hydrologic condition. CN value was converted to CN*.**

Time of Concentration Calculation

Area Number	Area	C_{PRE}	L	Elevation Change	Sw	Tp (Airport)
	(ha)		(m)	(m)	(m/m)	(hr)
4-ex2.3	0.91	0.30	60	2	2.5	0.17
4-ex1.1	6.53	0.30	200	20	10.0	0.19
4.3	2.59	0.20	210	20	9.5	0.22
4.5	1.61	0.20	85	10	11.8	0.13
6-ex3.3	1.33	0.20	70	7	10.0	0.13
6.4	2.11	0.20	200	12	6.0	0.26

COLE ENGINEERING

Post-Development (OTTHYMO)
STANDHYD - Input Parameters

Glenway Estates
File No. L09-301
Date: July 2013

Parameter	Units	Description	4-ex2.1	4-ex2.2	4-ex2.4	4-ex1.2	4-ex1.3	4.1	4.2	4.4	4.6	6-ex3.1	6-ex3.2	6.1	6.2	6.3	6.01	68.1	8.01	8.1	8.2	98.1	9.1	9.2	9.3	9.4	9.02	9.03
AREA	ha	Drainage Area	2.95	3.87	6.86	2.34	0.97	10.18	6.71	0.85	2.21	3.62	1.45	8.53	17.98	10.64	1.21	1.50	2.50	3.28	10.16	1.27	2.25	5.86	1.34	2.71	0.47	1.34
XIMP	%	Impervious Area (Direct Connection)	25.0%	61.0%	61.0%	55.0%	64.0%	75.0%	80.0%	28.0%	85.0%	28.0%	64.0%	65.0%	61.0%	70.0%	55.0%	64.0%	55.0%	70.0%	66.0%	68.0%	70.0%	56.0%	75.0%	78.0%	70.0%	75.0%
TIMP	%	Total Impervious Area	25.0%	61.0%	61.0%	55.0%	64.0%	75.0%	80.0%	28.0%	85.0%	28.0%	64.0%	65.0%	61.0%	70.0%	55.0%	64.0%	55.0%	70.0%	66.0%	68.0%	70.0%	56.0%	75.0%	78.0%	70.0%	75.0%
LGI	-	Overland Flow Length (Impervious)	30																									
SLPI	%	Average Slope (Impervious)	2																									
DT	min	Time Step Increment	12																									
DWF	m^3/s	Dry Weather Flow (Base Flow)	0																									
LOSS	-	Rainfall Loss Method	Loss = 2 - Modified SCS Curve Method, CN*= 74																									
SLPP	%	Average Slope (Pervious)	2																									
LGP	m	Overland Flow Length (Pervious)	20																									
MNP	-	Manning's Roughness Coefficient (Pervious)	0.25																									
DPSI	mm	Depression Storage (Impervious)	1																									
MNI	-	Manning's Roughness Coefficient (Impervious)	0.013																									

APPENDIX F
Proposed Pond Design SSD Tables

COLE ENGINEERING

Stage - Storage - Discharge Curve
Pond 4
L09-301
Date: July 26, 2013

		c	diam / length	control elev	inv	
	BottomDraw	0.63	0.230	269.815	269.70	
	Ditch Inlet (MTO Chart 4.20)			270.350		0.6 m W Ditch Inlet CB (2:1 grate slope)
	CB orifice plate	0.63	0.430	269.915	269.70	
	Control Weir	1.83	0.400	271.000		Sharp-crested rectangular weir
	Weir / Channel	1.67	25.000	271.700		25m base broad crested weir

	depth (m)	elev (m)	volume (ha/m)	BottomDraw (cms)	DI (cms)	Orifice Tube (cms)	Control Weir (cms)	Overflow Weir (cms)	TOTAL FLOW (cms)	DATA POINTS for Otthymo
	0.00	269.70	0.0000	0.000					0.000	1
	0.05	269.75	0.0296	0.000					0.000	
	0.10	269.80	0.0597	0.000					0.000	
	0.15	269.85	0.0904	0.022					0.022	
	0.20	269.90	0.1216	0.034					0.034	
	0.25	269.95	0.1534	0.043					0.043	2
	0.30	270.00	0.1857	0.050					0.050	
	0.35	270.05	0.2186	0.056					0.056	
	0.40	270.10	0.2520	0.062					0.062	
	0.45	270.15	0.2860	0.067					0.067	
	0.50	270.20	0.3206	0.072					0.072	
	0.55	270.25	0.3557	0.076					0.076	
	0.60	270.30	0.3914	0.081					0.081	
Top of Ext Det	0.65	270.35	0.4277	0.085	0.000	0.267			0.085	3
	0.70	270.40	0.4646	0.089	0.015	0.282			0.104	
	0.75	270.45	0.5021	0.092	0.039	0.296			0.131	
	0.80	270.50	0.5402	0.096	0.084	0.310			0.180	
	0.85	270.55	0.5789	0.099	0.120	0.323			0.219	
Orifice 1 + DI	0.90	270.60	0.6181	0.103	0.180	0.335			0.283	4
CB Orifice Tube	0.95	270.65	0.6580	0.106	0.252	0.347			0.347	5
	1.00	270.70	0.6985	0.109	0.330	0.359			0.359	
	1.05	270.75	0.7396	0.112	0.420	0.370			0.370	
	1.10	270.80	0.7813	0.115	0.540	0.381			0.381	
	1.15	270.85	0.8237	0.118	0.720	0.392			0.392	
	1.20	270.90	0.8667	0.121		0.402			0.402	
	1.25	270.95	0.9103	0.124		0.412			0.412	
Control Weir	1.30	271.00	0.9546	0.126		0.422	0.000		0.422	6
	1.35	271.05	0.9994	0.129		0.432	0.008		0.440	
	1.40	271.10	1.0450	0.131		0.441	0.023		0.464	
	1.45	271.15	1.0912	0.134		0.450	0.043		0.493	
	1.50	271.20	1.1380	0.136		0.459	0.065		0.525	
	1.55	271.25	1.1855	0.139		0.468	0.092		0.560	
	1.60	271.30	1.2337	0.141		0.477	0.120		0.597	
	1.65	271.35	1.2825	0.144		0.485	0.152		0.637	
	1.70	271.40	1.3320	0.146		0.494	0.185		0.679	7
	1.75	271.45	1.3821	0.148		0.502	0.221		0.723	
	1.80	271.50	1.4330	0.150		0.510	0.259		0.769	
	1.85	271.55	1.4845	0.153		0.518	0.299		0.817	
	1.90	271.60	1.5367	0.155		0.526	0.340		0.866	
	1.95	271.65	1.5896	0.157		0.534	0.384		0.917	
Top of Spillway	2.00	271.70	1.6432	0.159		0.541	0.429	0.000	0.970	8
	2.05	271.75	1.6975	0.161		0.549	0.429	0.467	1.444	
	2.10	271.80	1.7525	0.163		0.556	0.429	1.320	2.305	
	2.15	271.85	1.8082	0.165		0.564	0.429	2.425	3.418	9
	2.20	271.90	1.8646	0.167		0.571	0.429	3.734	4.734	
	2.25	271.95	1.9218	0.169		0.578	0.429	5.219	6.226	
	2.30	272.00	1.9796	0.171		0.585	0.429	6.860	7.874	
	2.35	272.05	2.0382	0.173		0.592	0.429	8.645	9.666	
	2.40	272.10	2.0975	0.175		0.599	0.429	10.562	11.590	
	2.45	272.15	2.1576	0.177		0.606	0.429	12.603	13.638	
	2.50	272.20	2.2183	0.179		0.613	0.429	14.761	15.802	10

COLE ENGINEERING

Stage - Storage - Discharge Curve
Pond 6
L09-301
Date: July 26, 2013

		c	diam / length	control elev	inv	
	BottomDraw	0.63	0.260	265.230	265.10	
	Ditch Inlet (MTO Chart 4.20)			265.900		1.2 m W Ditch Inlet CB (2:1 grate slope)
	CB orifice tube	0.80	0.750	265.475	265.10	
	Weir / Channel	1.67	25.000	267.150		5m base with 6cm width increase per 1cm in flow depth

	depth (m)	elev (m)	volume (ha/m)	BottomDraw (cms)	DI (cms)	Orifice Tube (cms)	Overflow Weir (cms)	TOTAL FLOW (cms)	DATA POINTS for Otthymo
	0.00	265.10	0.0000	0.000				0.000	1
	0.05	265.15	0.0403	0.000				0.000	
	0.10	265.20	0.0810	0.000				0.000	
	0.15	265.25	0.1220	0.021				0.021	
	0.20	265.30	0.1633	0.039				0.039	2
	0.25	265.35	0.2051	0.051				0.051	
	0.30	265.40	0.2471	0.061				0.061	
	0.35	265.45	0.2895	0.069				0.069	
	0.40	265.50	0.3323	0.077				0.077	
	0.45	265.55	0.3755	0.084				0.084	
	0.50	265.60	0.4190	0.090				0.090	3
	0.55	265.65	0.4629	0.096				0.096	
	0.60	265.70	0.5071	0.102				0.102	
	0.65	265.75	0.5518	0.107				0.107	
	0.70	265.80	0.5968	0.112				0.112	
Top of Ext Det	0.75	265.85	0.6422	0.117	0.000	0.959		0.117	
	0.80	265.90	0.6880	0.121	0.030	1.021		0.151	4
	0.85	265.95	0.7342	0.126	0.078	1.079		0.204	
	0.90	266.00	0.7808	0.130	0.168	1.134		0.298	
	0.95	266.05	0.8277	0.134	0.240	1.187		0.374	
	1.00	266.10	0.8751	0.138	0.360	1.238		0.498	5
	1.05	266.15	0.9229	0.142	0.504	1.286		0.646	6
	1.10	266.20	0.9711	0.146	0.660	1.333		0.806	
	1.15	266.25	1.0197	0.150	0.840	1.378		0.990	
Orifice 1 + DI	1.20	266.30	1.0687	0.153	1.080	1.422		1.233	
CB Orifice Tube	1.25	266.35	1.1181	0.157	1.440	1.464		1.464	7
	1.30	266.40	1.1680	0.160		1.506		0.160	
	1.35	266.45	1.2183	0.164		1.546		1.546	
	1.40	266.50	1.2690	0.167		1.585		1.585	
	1.45	266.55	1.3201	0.170		1.623		1.623	8
	1.50	266.60	1.3717	0.173		1.660		1.660	
	1.55	266.65	1.4237	0.177		1.697		1.697	
	1.60	266.70	1.4761	0.180		1.733		1.733	
	1.65	266.75	1.5290	0.183		1.768		1.768	
	1.70	266.80	1.5824	0.186		1.802		1.802	
	1.75	266.85	1.6361	0.189		1.836		1.836	
	1.80	266.90	1.6904	0.191		1.869		1.869	
	1.85	266.95	1.7451	0.194		1.901		1.901	
	1.90	267.00	1.8002	0.197		1.933		1.933	
	1.95	267.05	1.8559	0.200		1.965		1.965	
100yr	2.00	267.10	1.9119	0.203		1.996		1.996	
Top of Spillway	2.05	267.15	1.9685	0.205		2.026	0.000	2.026	9
	2.10	267.20	2.0255	0.208		2.056	0.472	2.528	
	2.15	267.25	2.0830	0.211		2.086	1.352	3.438	
	2.20	267.30	2.1410	0.213		2.115	2.513	4.628	10
	2.25	267.35	2.1995	0.216		2.144	3.913	6.057	
	2.30	267.40	2.2584	0.218		2.172	5.532	7.704	
	2.35	267.45	2.3179	0.221		2.200	7.354	9.554	
	2.40	267.50	2.3778	0.223		2.228	9.371	11.599	
	2.45	267.55	2.4383	0.226		2.255	11.576	13.831	
	2.50	267.60	2.4992	0.228		2.282	13.964	16.246	11

COLE ENGINEERING

Stage - Storage - Discharge Curve
Pond 8
L09-301
Date: July 26, 2013

		c	diam / length	control elev	inv				
	BottomDraw	0.63	0.160	269.980	269.90				
	Ditch Inlet (MTO Chart 4.20)			271.150		1.2 m W Ditch Inlet CB (2:1 grate slope)			
	CB pipe	0.80	0.525	270.163	269.90				
	Weir / Channel	1.67	5.000	271.900		5m base with 6cm width increase per 1cm in flow depth			

	depth (m)	elev (m)	volume (ha/m)	BottomDraw (cms)	DI (cms)	Orifice Tube (cms)	Overflow Weir (cms)	TOTAL FLOW (cms)	DATA POINTS for Otthymo
	0.00	269.90	0.0000	0.000				0.000	1
	0.05	269.95	0.0174	0.000				0.000	
	0.10	270.00	0.0350	0.000				0.000	
	0.15	270.05	0.0529	0.015				0.015	
	0.20	270.10	0.0711	0.019				0.019	2
	0.25	270.15	0.0896	0.023				0.023	
	0.30	270.20	0.1084	0.026				0.026	
	0.35	270.25	0.1274	0.029				0.029	
	0.40	270.30	0.1467	0.032				0.032	
	0.45	270.35	0.1664	0.034				0.034	
	0.50	270.40	0.1863	0.036				0.036	3
	0.55	270.45	0.2065	0.038				0.038	
	0.60	270.50	0.2271	0.040				0.040	
	0.65	270.55	0.2480	0.042				0.042	
	0.70	270.60	0.2692	0.044				0.044	
Top of Ext Det	0.75	270.65	0.2907	0.046	0.000	0.536		0.046	4
	0.80	270.70	0.3125	0.048	0.030	0.562		0.078	
	0.85	270.75	0.3347	0.049	0.078	0.588		0.127	
	0.90	270.80	0.3572	0.051	0.168	0.612		0.219	
	0.95	270.85	0.3801	0.052	0.240	0.636		0.292	
	1.00	270.90	0.4033	0.054	0.360	0.659		0.414	
Orifice 1 + DI	1.05	270.95	0.4269	0.055	0.504	0.681		0.559	5
Orifice Tube	1.10	271.00	0.4508	0.057	0.660	0.702		0.702	6
	1.15	271.05	0.4751	0.058	0.840	0.723		0.723	
	1.20	271.10	0.4997	0.059	1.080	0.743		0.743	
	1.25	271.15	0.5248	0.061	1.440	0.762		0.762	
	1.30	271.20	0.5502	0.062		0.781		0.781	
	1.35	271.25	0.5760	0.063		0.800		0.800	
	1.40	271.30	0.6021	0.064		0.818		0.818	
	1.45	271.35	0.6287	0.066		0.836		0.836	
	1.50	271.40	0.6557	0.067		0.853		0.853	
	1.55	271.45	0.6830	0.068		0.870		0.870	
	1.60	271.50	0.7108	0.069		0.887		0.887	
	1.65	271.55	0.7390	0.070		0.904		0.904	
	1.70	271.60	0.7676	0.071		0.920		0.920	
	1.75	271.65	0.7966	0.073		0.936		0.936	
	1.80	271.70	0.8260	0.074		0.951		0.951	
	1.85	271.75	0.8559	0.075		0.967		0.967	
	1.90	271.80	0.8862	0.076		0.982		0.982	
	1.95	271.85	0.9170	0.077		0.996		0.996	
100-Year El.	2.00	271.90	0.9482	0.078		1.011	0.000	1.011	7
Top of Spillway	2.05	271.95	0.9798	0.079		1.026	0.099	1.125	8
Double 100-Year	2.10	272.00	1.0119	0.080		1.040	0.296	1.336	
	2.15	272.05	1.0444	0.081		1.054	0.572	1.626	
	2.20	272.10	1.0774	0.082		1.068	0.926	1.994	
	2.25	272.15	1.1109	0.083		1.081	1.357	2.438	
	2.30	272.20	1.1448	0.084		1.095	1.866	2.961	9

COLE ENGINEERING

Stage - Storage - Discharge Curve
Pond 9
L09-301
Date: July 26, 2013

		c	diam / length	control elev	inv				
	BottomDraw	0.63	0.190	264.545	264.45				
	Ditch Inlet (MTO Chart 4.20)			264.900		1.2 m W Ditch Inlet CB (2:1 grate slope)			
	CB orifice plate	0.63	0.505	264.703	264.45				
	Weir / Channel	1.67	15.000	266.900		15m base			

	depth (m)	elev (m)	volume (ha/m)	BottomDraw (cms)	DI (cms)	Orifice Plate (cms)	Overflow Weir (cms)	TOTAL FLOW (cms)	DATA POINTS for Otthymo
	0.00	264.45	0.0000	0.000				0.000	1
	0.05	264.50	0.0299	0.000				0.000	
	0.10	264.55	0.0601	0.000				0.000	
	0.15	264.60	0.0906	0.019				0.019	2
	0.20	264.65	0.1214	0.026				0.026	
	0.25	264.70	0.1524	0.031				0.031	
	0.30	264.75	0.1838	0.036				0.036	
	0.35	264.80	0.2155	0.040				0.040	
Top of Ext Det	0.40	264.85	0.2475	0.044	0.000			0.044	
	0.45	264.90	0.2799	0.047	0.030	0.248		0.077	3
	0.50	264.95	0.3125	0.050	0.078	0.278		0.128	
	0.55	265.00	0.3454	0.053	0.168	0.305		0.221	
Orifice 1 + DI	0.60	265.05	0.3787	0.056	0.240	0.329		0.296	4
CB Orifice Tube	0.65	265.10	0.4123	0.059	0.360	0.352		0.352	5
	0.70	265.15	0.4462	0.062	0.504	0.374		0.374	
	0.75	265.20	0.4805	0.064	0.660	0.394		0.394	
	0.80	265.25	0.5150	0.066	0.840	0.414		0.414	
	0.85	265.30	0.5499	0.069	1.080	0.432		0.432	
	0.90	265.35	0.5852	0.071	1.440	0.450		0.450	
	0.95	265.40	0.6208	0.073		0.467		0.467	
	1.00	265.45	0.6567	0.075		0.483		0.483	
	1.05	265.50	0.6930	0.077		0.499		0.499	
	1.10	265.55	0.7296	0.079		0.515		0.515	
	1.15	265.60	0.7666	0.081		0.530		0.530	
	1.20	265.65	0.8039	0.083		0.544		0.544	
	1.25	265.70	0.8416	0.085		0.558		0.558	
	1.30	265.75	0.8796	0.087		0.572		0.572	
	1.35	265.80	0.9180	0.089		0.586		0.586	
	1.40	265.85	0.9568	0.090		0.599		0.599	
	1.45	265.90	0.9959	0.092		0.612		0.612	
	1.50	265.95	1.0354	0.094		0.624		0.624	
	1.55	266.00	1.0753	0.095		0.637		0.637	
	1.60	266.05	1.1156	0.097		0.649		0.649	
	1.65	266.10	1.1562	0.099		0.661		0.661	
	1.70	266.15	1.1972	0.100		0.672		0.672	
	1.75	266.20	1.2386	0.102		0.684		0.684	
	1.80	266.25	1.2804	0.103		0.695		0.695	
	1.85	266.30	1.3225	0.105		0.706		0.706	
	1.90	266.35	1.3651	0.106		0.717		0.717	
	1.95	266.40	1.4081	0.108		0.728		0.728	
100-Year WS	2.00	266.45	1.4514	0.109		0.739		0.739	6
	2.05	266.50	1.4952	0.111		0.749		0.749	
	2.10	266.55	1.5393	0.112		0.760		0.760	
	2.15	266.60	1.5839	0.113		0.770		0.770	
	2.20	266.65	1.6289	0.115		0.780		0.780	
	2.25	266.70	1.6743	0.116		0.790		0.790	
	2.30	266.75	1.7201	0.117		0.800		0.800	
	2.35	266.80	1.7663	0.119		0.809		0.809	
	2.40	266.85	1.8129	0.120		0.819		0.819	
Top of Spillway	2.45	266.90	1.8600	0.121		0.829	0.000	0.829	7
	2.50	266.95	1.9075	0.123		0.838	0.286	1.124	8
	2.55	267.00	0.0000	0.124		0.847	0.824	1.671	
	2.60	267.05	0.0000	0.125		0.856	1.543	2.399	
	2.65	267.10	0.0000	0.126		0.865	2.420	3.285	
	2.70	267.15	0.0000	0.128		0.874	3.444	4.319	
	2.75	267.20	0.0000	0.129		0.883	4.610	5.493	9
	2.80	267.25	0.0000	0.130		0.892	5.913	6.805	
	2.85	267.30	0.0000	0.131		0.901	7.351	8.252	
	2.90	267.35	0.0000	0.133		0.909	8.923	9.832	
	2.95	267.40	0.0000	0.134		0.918	10.628	11.546	
	3.00	267.45	0.0000	0.135		0.926	12.466	13.392	10

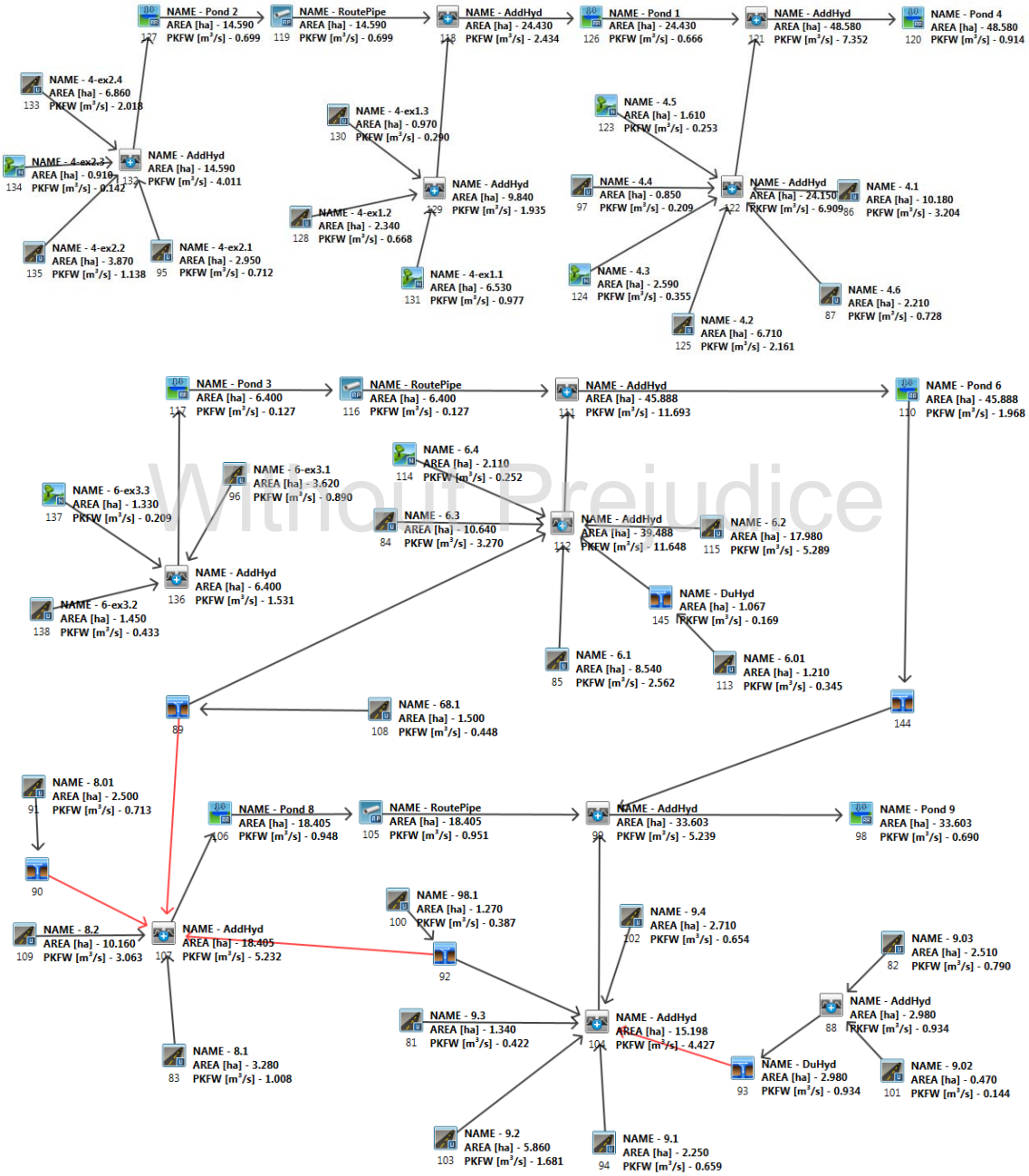
APPENDIX G
Post-Development Hydrologic Model Output

COLE ENGINEERING

Experience Enhancing Excellence

L09-301
Glenway golf course development, Newmarket, ON
24 Hour SCS Storm Post-Development Model Schematic
July 2013

VO2 Model Schematic



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================================================================================================
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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-
94bc9e57a3dd\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-
94bc9e57a3dd\Scenario.sum


DATE: 07/26/2013                          TIME: 02:18:35

USER:


COMMENTS: _____________________________________________________


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  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************


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|    READ STORM   |      Filename: C:\Users\DMcBrayne\AppD
|                 |                ata\Local\Temp\
|                 |                64bb3598-a470-4a6a-a565-94bc9e57a3dd\44ae5d35
| Ptotal= 52.12 mm |    Comments: TWO YEAR SCS STORM  WITH A TWELVE MINUTE
-------------------

                TIME    RAIN |  TIME    RAIN | '  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr | '   hrs   mm/hr |   hrs   mm/hr
               0.20    0.51 |  6.20    1.02 |  12.20   10.67 |  18.20    0.76
               0.40    0.51 |  6.40    1.02 |  12.40    6.60 |  18.40    0.76
               0.60    0.51 |  6.60    1.02 |  12.60    4.83 |  18.60    0.76
               0.80    0.51 |  6.80    1.02 |  12.80    4.57 |  18.80    0.76
               1.00    0.51 |  7.00    1.02 |  13.00    3.30 |  19.00    0.76
               1.20    0.51 |  7.20    1.02 |  13.20    2.79 |  19.20    0.76
               1.40    0.51 |  7.40    1.02 |  13.40    2.79 |  19.40    0.76
               1.60    0.51 |  7.60    1.02 |  13.60    2.79 |  19.60    0.76
               1.80    0.51 |  7.80    1.02 |  13.80    2.79 |  19.80    0.76
               2.00    0.51 |  8.00    1.02 |  14.00    2.79 |  20.00    0.76
               2.20    0.51 |  8.20    1.52 |  14.20    1.52 |  20.20    0.51
               2.40    0.51 |  8.40    1.52 |  14.40    1.52 |  20.40    0.51
               2.60    0.51 |  8.60    1.52 |  14.60    1.52 |  20.60    0.51
               2.80    0.51 |  8.80    1.52 |  14.80    1.52 |  20.80    0.51
               3.00    0.51 |  9.00    1.52 |  15.00    1.52 |  21.00    0.51
               3.20    0.51 |  9.20    1.52 |  15.20    1.52 |  21.20    0.51
               3.40    0.51 |  9.40    1.52 |  15.40    1.52 |  21.40    0.51
               3.60    0.51 |  9.60    1.52 |  15.60    1.52 |  21.60    0.51
               3.80    0.51 |  9.80    1.52 |  15.80    1.52 |  21.80    0.51
               4.00    0.51 | 10.00    1.52 |  16.00    1.52 |  22.00    0.51
               4.20    1.02 | 10.20    3.05 |  16.20    1.02 |  22.20    0.51
               4.40    1.02 | 10.40    3.05 |  16.40    1.02 |  22.40    0.51
               4.60    1.02 | 10.60    3.05 |  16.60    1.02 |  22.60    0.51
               4.80    1.02 | 10.80    3.05 |  16.80    1.02 |  22.80    0.51
               5.00    1.02 | 11.00    3.05 |  17.00    1.02 |  23.00    0.51
               5.20    1.02 | 11.20    4.06 |  17.20    1.02 |  23.20    0.51
               5.40    1.02 | 11.40    5.84 |  17.40    1.02 |  23.40    0.51
               5.60    1.02 | 11.60   13.21 |  17.60    1.02 |  23.60    0.51
               5.80    1.02 | 11.80   28.96 |  17.80    1.02 |  23.80    0.51
               6.00    1.02 | 12.00   60.45 |  18.00    1.02 |  24.00    0.51

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

-------------------
| CALIB           |
| NASHYD   (0114) |   Area    (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.070 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  15.966
     TOTAL RAINFALL   (mm)=  52.121
     RUNOFF COEFFICIENT   =   0.306

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

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-------------------
| CALIB           |
| STANDHYD  (0084) |   Area    (ha)=  10.64
|ID= 1 DT=12.0 min|   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.45          3.19
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      60.45         24.82
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.23 (ii)     9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.25          0.18          1.427 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12         18.32          41.28
     TOTAL RAINFALL   (mm)=      52.12         52.12          52.12
     RUNOFF COEFFICIENT   =       0.98          0.35           0.79

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0085) |   Area    (ha)=   8.54
|ID= 1 DT=12.0 min|   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.55          2.99
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      60.45         24.82
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.23 (ii)     9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.10
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.93          0.17          1.098 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12         18.32          39.64
     TOTAL RAINFALL   (mm)=      52.12         52.12          52.12
     RUNOFF COEFFICIENT   =       0.98          0.35           0.76

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

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0108) |   Area    (ha)=   1.50
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|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.96         0.54
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
                  over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.16         0.03          0.191 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     51.12        18.32         39.31
     TOTAL RAINFALL   (mm)=     52.12        52.12         52.12
     RUNOFF COEFFICIENT   =      0.98         0.35          0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0089) |
| Inlet Cap.=0.350 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.50      0.19     12.00   39.31
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.50      0.19     12.00   39.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD  (0113)  |   Area    (ha)=   1.21
|ID= 1 DT=12.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.67         0.54
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
                  over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.11         0.03          0.142 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     51.12        18.32         36.36
     TOTAL RAINFALL   (mm)=     52.12        52.12         52.12
     RUNOFF COEFFICIENT   =      0.98         0.35          0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0145) |
| Inlet Cap.=0.169 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.21      0.14     12.00   36.36
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.21      0.14     12.00   36.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0115)  |   Area    (ha)=  17.98
|ID= 1 DT=12.0 min  |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.97         7.01
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     60.45        24.82
                  over (min)     12.00        12.00
     Storage Coeff.  (min)=      1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=      1.84         0.39          2.230 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     51.12        18.32         38.33
     TOTAL RAINFALL   (mm)=     52.12        52.12         52.12
     RUNOFF COEFFICIENT   =      0.98         0.35          0.74

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0112) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (0114):     2.11   0.070    12.00    15.97
     + ID2= 2 (0115):    17.98   2.230    12.00    38.33
       ================================================
       ID = 3 (0112):    20.09   2.300    12.00    35.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0112) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0145 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
       ID1= 3 (0112):    20.09   2.300    12.00    35.98
     + ID2= 2 (0145):     0.00   0.000     0.00     0.00
       ================================================
       ID = 1 (0112):    20.09   2.300    12.00    35.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0112) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (0112):    20.09   2.300    12.00    35.98
     + ID2= 2 (0084):    10.64   1.427    12.00    41.28
       ================================================
       ID = 3 (0112):    30.73   3.727    12.00    37.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0112) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
       ID1= 3 (0112):    30.73   3.727    12.00    37.82
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          + ID2= 2 (0085):     8.54   1.098    12.00    39.64
            ==================================================
            ID = 1 (0112):    39.27   4.825    12.00    38.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0089 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0112):    39.27   4.825    12.00    38.21
        + ID2= 2 (0089):     0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0112):    39.27   4.825    12.00    38.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| NASHYD    (0137) |   Area     (ha)=   1.33   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.060 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  13.177
     TOTAL RAINFALL   (mm)=  52.121
     RUNOFF COEFFICIENT   =   0.253

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

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--------------------
| CALIB            |
| STANDHYD  (0096) |   Area     (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.01         2.61
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.17         0.14          0.315 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          27.50
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.53

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0138) |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.93         0.52
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.16         0.03          0.185 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          39.31
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0136) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0137):     1.33   0.060    12.00    13.18
        + ID2= 2 (0138):     1.45   0.185    12.00    39.31
          ================================================
          ID = 3 (0136):     2.78   0.244    12.00    26.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0136) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0136):     2.78   0.244    12.00    26.81
        + ID2= 2 (0096):     3.62   0.315    12.00    27.50
          ================================================
          ID = 1 (0136):     6.40   0.559    12.00    27.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0117) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE  |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)  |   (cms)     (ha.m.)
                         0.0000     0.0000   |  0.3260      0.8017
                         0.0790     0.1850   |  0.3960      0.9004
                         0.2270     0.3947   |  0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0136)    6.400     0.559     12.00      27.20
     OUTFLOW: ID= 1 (0117)    6.400     0.041     13.00      27.11

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.42
                TIME SHIFT OF PEAK FLOW          (min)= 60.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.0972

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| ROUTE PIPE (0116)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 850.00
--------------------     Slope      (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)        min
        0.09    .367E+02        0.0          0.80         17.68
        0.17    .102E+03        0.1          1.25         11.33
        0.26    .184E+03        0.3          1.61          8.81
        0.35    .278E+03        0.6          1.91          7.41
        0.43    .382E+03        1.0          2.18          6.51
        0.52    .492E+03        1.4          2.41          5.88
        0.61    .608E+03        1.9          2.61          5.43
        0.69    .727E+03        2.4          2.79          5.08
        0.78    .848E+03        2.9          2.95          4.81
        0.87    .970E+03        3.5          3.08          4.60
        0.96    .109E+04        4.1          3.20          4.43
```

1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.04	13.00	27.11	0.09	0.82
OUTFLOW: ID= 1 (0116)	6.40	0.04	13.50	27.10	0.09	0.82

ADD HYD (0111) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	39.27	4.825	12.00	38.21
+ ID2= 2 (0116):	6.40	0.041	13.50	27.10
ID = 3 (0111):	45.67	4.840	12.00	36.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.4644	1.1181
0.0392	0.1633	1.6231	1.3201
0.0901	0.4190	2.0261	1.9685
0.1513	0.6880	2.6873	2.1410
0.4982	0.8751	6.1638	2.4992
0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.670	4.840	12.00	36.67
OUTFLOW: ID= 1 (0110)	45.670	0.542	12.60	36.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.21
TIME SHIFT OF PEAK FLOW (min)= 36.00
MAXIMUM STORAGE USED (ha.m.)= 0.8902

DUHYD (0144) | Inlet Cap.=2.026 | #of Inlets= 1 | Total(cms)= 2.0

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	45.67	0.54	12.60	36.64
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	45.67	0.54	12.60	36.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB | STANDHYD (0081) | ID= 1 DT=12.0 min | Area (ha)= 1.34 | Total Imp(%)= 75.00 | Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.00	0.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		60.45	24.82
over (min)		12.00	12.00
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	0.17	0.02	0.187 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	42.92
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB | STANDHYD (0082) | ID= 1 DT=12.0 min | Area (ha)= 2.51 | Total Imp(%)= 75.00 | Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		60.45	24.82
over (min)		12.00	12.00
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	0.32	0.03	0.351 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	42.92
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB | STANDHYD (0101) | ID= 1 DT=12.0 min | Area (ha)= 0.47 | Total Imp(%)= 70.00 | Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		60.45	24.82
over (min)		12.00	12.00
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.10
			TOTALS
PEAK FLOW	(cms)=	0.06	0.01	0.063 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	41.27
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	0.47	0.063	12.00	41.27
+ ID2= 2 (0082):	2.51	0.351	12.00	42.92

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          ID = 3 (0088):     2.98   0.414    12.00    42.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| DUHYD     (0093) |
| Inlet Cap.=0.934 |
| #of Inlets=    1 |
| Total(cms)=  0.9 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.98      0.41     12.00    42.66
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   2.98      0.41     12.00    42.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0094)   |   Area    (ha)=   2.25
|ID= 1 DT=12.0 min   |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.35         0.90
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.23         0.05          0.277 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          38.00
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.73

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0100)   |   Area    (ha)=   1.27
|ID= 1 DT=12.0 min   |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.86         0.41
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.15         0.02          0.168 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          40.62
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0092) |
| Inlet Cap.=0.309 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.27      0.17     12.00    40.62
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.27      0.17     12.00    40.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0102)   |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min   |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.11         0.11          0.226 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          26.52
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.51

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0103)   |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min   |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.14          0.694 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32          36.69
     TOTAL RAINFALL   (mm)=      52.12        52.12          52.12
     RUNOFF COEFFICIENT   =       0.98         0.35           0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0104) |
|   1 +  2 =  3    |         AREA    QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID1= 1 (0102):     2.71   0.226    12.00     26.52
        + ID2= 2 (0103):     5.86   0.694    12.00     36.69
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          ================================================
          ID = 3 (0104):     8.57   0.920    12.00    33.47

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0104):     8.57   0.920    12.00    33.47
        + ID2= 2 (0081):     1.34   0.187    12.00    42.92
          ================================================
          ID = 1 (0104):     9.91   1.107    12.00    34.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0092 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0104):     9.91   1.107    12.00    34.75
        + ID2= 2 (0092):     0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0104):     9.91   1.107    12.00    34.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0104):     9.91   1.107    12.00    34.75
        + ID2= 2 (0093):     2.98   0.414    12.00    42.66
          ================================================
          ID = 1 (0104):    12.89   1.521    12.00    36.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0104):    12.89   1.521    12.00    36.58
        + ID2= 2 (0094):     2.25   0.277    12.00    38.00
          ================================================
          ID = 3 (0104):    15.14   1.798    12.00    36.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0083) |   Area    (ha)=   3.28
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.30         0.98
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.39         0.05          0.440 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32         41.28
     TOTAL RAINFALL   (mm)=      52.12        52.12         52.12
     RUNOFF COEFFICIENT   =       0.98         0.35          0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0091) |   Area    (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38         1.12
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.23         0.06          0.293 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32         36.36
     TOTAL RAINFALL   (mm)=      52.12        52.12         52.12
     RUNOFF COEFFICIENT   =       0.98         0.35          0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0090) |
| Inlet Cap.=0.502 |
| #of Inlets=   1  |
| Total(cms)=  0.5 |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
     TOTAL HYD.(ID= 1):     2.50     0.29    12.00    36.36
     ================================================
     MAJOR SYS.(ID= 2):     0.00     0.00     0.00     0.00
     MINOR SYS.(ID= 3):     2.50     0.29    12.00    36.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0109) |   Area    (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.71         3.45
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.45        24.82
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.23 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.13         0.19          1.317 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=      51.12        18.32         39.97
     TOTAL RAINFALL   (mm)=      52.12        52.12         52.12
     RUNOFF COEFFICIENT   =       0.98         0.35          0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| ADD HYD   (0107) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0109):    10.16   1.317    12.00    39.97
       + ID2= 2 (0083):     3.28   0.440    12.00    41.28
         ================================================
         ID = 3 (0107):    13.44   1.757    12.00    40.29

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0107) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0107):    13.44   1.757    12.00    40.29
       + ID2= 2 (0089):     1.50   0.191    12.00    39.31
         ================================================
         ID = 1 (0107):    14.94   1.948    12.00    40.19

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0107) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0107):    14.94   1.948    12.00    40.19
       + ID2= 2 (0090):     2.50   0.293    12.00    36.36
         ================================================
         ID = 3 (0107):    17.44   2.242    12.00    39.64

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0107) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0107):    17.44   2.242    12.00    39.64
       + ID2= 2 (0092):     1.27   0.168    12.00    40.62
         ================================================
         ID = 1 (0107):    18.71   2.409    12.00    39.71

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0106) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |  0.7020      0.4508
                          0.0190     0.0711   |  1.0110      0.9482
                          0.0360     0.1863   |  1.0260      0.9798
                          0.0460     0.2907   |  1.0950      1.1448
                          0.5590     0.4269   |  0.0000      0.0000

                               AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0107)     18.710     2.409     12.00      39.71
     OUTFLOW: ID= 1 (0106)     18.710     0.479     12.20      39.66

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.90
                   TIME SHIFT OF PEAK FLOW          (min)= 12.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.4067

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--------------------
| ROUTE PIPE (0105)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 467.00
--------------------     Slope      (m/m)=  0.006
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)      (cu.m.)       (cms)         (m/s)        min
        0.09     .201E+02       0.0           0.88         8.87
        0.17     .560E+02       0.2           1.37         5.68
        0.26     .101E+03       0.4           1.76         4.42
        0.35     .153E+03       0.7           2.09         3.72
        0.43     .210E+03       1.1           2.38         3.27
        0.52     .270E+03       1.5           2.64         2.95
        0.61     .334E+03       2.0           2.86         2.72
        0.69     .399E+03       2.6           3.06         2.55
        0.78     .466E+03       3.2           3.23         2.41
        0.87     .533E+03       3.9           3.38         2.31
        0.96     .599E+03       4.5           3.50         2.22
        1.04     .665E+03       5.1           3.60         2.16
        1.13     .728E+03       5.7           3.68         2.11
        1.22     .789E+03       6.3           3.74         2.08
        1.30     .846E+03       6.8           3.76         2.07
        1.39     .897E+03       7.2           3.76         2.07
        1.48     .943E+03       7.5           3.72         2.09
        1.56     .978E+03       7.6           3.63         2.15
        1.65     .999E+03       7.1           3.30         2.36

                                <---- hydrograph ---->   <-pipe / channel->
                                 AREA    QPEAK   TPEAK   R.V.   MAX DEPTH  MAX VEL
                                  (ha)    (cms)   (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0106)     18.71     0.48    12.20   39.66      0.29      1.86
     OUTFLOW: ID= 1 (0105)     18.71     0.49    12.30   39.66      0.29      1.87

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--------------------
| ADD HYD   (0099) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0104):    15.14   1.798    12.00    36.79
       + ID2= 2 (0105):    18.71   0.490    12.30    39.66
         ================================================
         ID = 3 (0099):    33.85   1.881    12.00    38.42

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0099) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0144 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0099):    33.85   1.881    12.00    38.42
       + ID2= 2 (0144):     0.00   0.000     0.00     0.00
         ================================================
         ID = 1 (0099):    33.85   1.881    12.00    38.42

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0098) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |  0.7390      1.4514
                          0.0190     0.0906   |  0.8290      1.8600
                          0.0770     0.2799   |  1.1240      1.9075
                          0.2960     0.3787   |  5.4930      2.2479
                          0.3520     0.4123   | 13.3920      2.4903

                               AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0099)     33.850     1.881     12.00      38.42
     OUTFLOW: ID= 1 (0098)     33.850     0.366     13.30      38.38

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.45
                   TIME SHIFT OF PEAK FLOW          (min)= 78.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.4494

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--------------------
| CALIB            |
| NASHYD   (0123)  |   Area     (ha)=   1.61   Curve Number    (CN)= 74.0
| ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.072 (i)
     TIME TO PEAK    (hrs)=  12.000
```

RUNOFF VOLUME (mm)= 13.177
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.253

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

CALIB NASHYD (0124) ID= 1 DT=12.0 min	Area (ha)= 2.59 Curve Number (CN)= 74.0 Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.099 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.706
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.301

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

CALIB STANDHYD (0086) ID= 1 DT=12.0 min	Area (ha)= 10.18 Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	7.63	2.55	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	1.28	0.14	1.423 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	42.92
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0087) ID= 1 DT=12.0 min	Area (ha)= 2.21 Total Imp(%)= 85.00 Dir. Conn.(%)= 85.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.88	0.33	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.32	0.02	0.334 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	46.20
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0097) ID= 1 DT=12.0 min	Area (ha)= 0.85 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.24	0.61	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.04	0.03	0.074 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	27.50
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.53

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0125) ID= 1 DT=12.0 min	Area (ha)= 6.71 Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	5.37	1.34	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.90	0.07	0.976 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	44.56
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0122) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0123):	1.61	0.072	12.00	13.18
+ ID2= 2 (0124):	2.59	0.099	12.00	15.71
ID = 3 (0122):	4.20	0.171	12.00	14.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	4.20	0.171	12.00	14.74
+ ID2= 2 (0125):	6.71	0.976	12.00	44.56
ID = 1 (0122):	10.91	1.147	12.00	33.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	10.91	1.147	12.00	33.08
+ ID2= 2 (0086):	10.18	1.423	12.00	42.92
ID = 3 (0122):	21.09	2.570	12.00	37.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	21.09	2.570	12.00	37.83
+ ID2= 2 (0087):	2.21	0.334	12.00	46.20
ID = 1 (0122):	23.30	2.904	12.00	38.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	23.30	2.904	12.00	38.62
+ ID2= 2 (0097):	0.85	0.074	12.00	27.50
ID = 3 (0122):	24.15	2.977	12.00	38.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0131) ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.275 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 15.327
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.294

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

CALIB
STANDHYD (0128) ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.29	1.05
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	60.45	24.82
over (min)	12.00	12.00
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

			TOTALS
PEAK FLOW (cms)=	0.22	0.06	0.274 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.12	18.32	36.36
TOTAL RAINFALL (mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT =	0.98	0.35	0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0130) ID= 1 DT=12.0 min

Area (ha)= 0.97
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.62	0.35
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	60.45	24.82
over (min)	12.00	12.00
Storage Coeff. (min)=	1.23 (ii)	9.36 (ii)
Unit Hyd. Tpeak (min)=	12.00	12.00
Unit Hyd. peak (cms)=	0.14	0.10

			TOTALS
PEAK FLOW (cms)=	0.10	0.02	0.124 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	51.12	18.32	39.30
TOTAL RAINFALL (mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT =	0.98	0.35	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0128):	2.34	0.274	12.00	36.36
+ ID2= 2 (0130):	0.97	0.124	12.00	39.30
ID = 3 (0129):	3.31	0.398	12.00	37.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0129):	3.31	0.398	12.00	37.22
+ ID2= 2 (0131):	6.53	0.275	12.00	15.33
ID = 1 (0129):	9.84	0.673	12.00	22.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0134) ID= 1 DT=12.0 min

Area (ha)= 0.91 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.040 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 14.903
TOTAL RAINFALL (mm)= 52.121
RUNOFF COEFFICIENT = 0.286

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

CALIB					
STANDHYD (0095)	Area (ha)= 2.95				
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.74	2.21	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.12	0.12	0.246 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	26.52
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.51

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0133)	Area (ha)= 6.86				
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.70	0.15	0.851 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	38.33
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0135)	Area (ha)= 3.87				
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.36	1.51	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		60.45	24.82	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.23 (ii)	9.36 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.10	
				TOTALS
PEAK FLOW	(cms)=	0.40	0.08	0.480 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	51.12	18.32	38.33
TOTAL RAINFALL	(mm)=	52.12	52.12	52.12
RUNOFF COEFFICIENT	=	0.98	0.35	0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0132)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0133):	6.86	0.851	12.00	38.33	
+ ID2= 2 (0134):	0.91	0.040	12.00	14.90	
ID = 3 (0132):	7.77	0.891	12.00	35.58	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0132):	7.77	0.891	12.00	35.58	
+ ID2= 2 (0135):	3.87	0.480	12.00	38.33	
ID = 1 (0132):	11.64	1.371	12.00	36.50	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0132):	11.64	1.371	12.00	36.50	
+ ID2= 2 (0095):	2.95	0.246	12.00	26.52	
ID = 3 (0132):	14.59	1.617	12.00	34.48	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4563
	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	1.617	12.00	34.48
OUTFLOW: ID= 1 (0127)	14.590	0.365	12.20	34.46

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.58
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.2130

ROUTE PIPE (0119)		
IN= 2---> OUT= 1	PIPE Number	= 1.00
DT= 5.0 min	Diameter (mm)	=1650.00
	Length (m)	= 500.00
	Slope (m/m)	= 0.005
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67

0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

		<---- hydrograph ---->			<-pipe / channel->	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW :	ID= 2 (0127)	14.59	0.37	12.20	34.46	0.27	1.62
OUTFLOW:	ID= 1 (0119)	14.59	0.37	12.30	34.46	0.27	1.63

ADD HYD (0118)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):		14.59	0.367	12.30	34.46
+ ID2= 2 (0129):		9.84	0.673	12.00	22.69
ID = 3 (0118):		24.43	0.848	12.00	29.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0118)	24.430	0.848	12.00	29.74
OUTFLOW:	ID= 1 (0126)	24.430	0.363	12.90	29.74

PEAK FLOW REDUCTION [Qout/Qin](%)= 42.75
TIME SHIFT OF PEAK FLOW (min)= 54.00
MAXIMUM STORAGE USED (ha.m.)= 0.1609

ADD HYD (0121)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):		24.15	2.977	12.00	38.23
+ ID2= 2 (0126):		24.43	0.363	12.90	29.74
ID = 3 (0121):		48.58	3.104	12.00	33.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0121)	48.580	3.104	12.00	33.99
OUTFLOW:	ID= 1 (0120)	48.580	0.366	14.20	33.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.80
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 0.7342

** SIMULATION NUMBER: 2 **

READ STORM
Ptotal= 62.43 mm

Filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-94bc9e57a3dd\d847643a
Comments: FIVE YR SCS STORM WITH A TWELVE MINUTE

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	0.76	6.20	1.27	12.20	12.19	18.20	1.27
0.40	0.76	6.40	1.27	12.40	7.62	18.40	1.27
0.60	0.76	6.60	1.27	12.60	5.59	18.60	1.27
0.80	0.76	6.80	1.27	12.80	5.08	18.80	1.27
1.00	0.76	7.00	1.27	13.00	3.81	19.00	1.27
1.20	0.76	7.20	1.27	13.20	3.05	19.20	1.02
1.40	0.76	7.40	1.27	13.40	3.05	19.40	1.02
1.60	0.76	7.60	1.27	13.60	3.05	19.60	1.02
1.80	0.76	7.80	1.27	13.80	3.05	19.80	1.02
2.00	0.76	8.00	1.27	14.00	3.05	20.00	1.02
2.20	0.76	8.20	1.78	14.20	1.78	20.20	1.02
2.40	0.76	8.40	1.78	14.40	1.78	20.40	1.02
2.60	0.76	8.60	1.78	14.60	1.78	20.60	1.02
2.80	0.76	8.80	1.78	14.80	1.78	20.80	1.02
3.00	0.76	9.00	1.78	15.00	1.78	21.00	1.02
3.20	0.76	9.20	1.78	15.20	1.78	21.20	0.76
3.40	0.76	9.40	1.78	15.40	1.78	21.40	0.76
3.60	0.76	9.60	1.78	15.60	1.78	21.60	0.76
3.80	0.76	9.80	1.78	15.80	1.78	21.80	0.76
4.00	0.76	10.00	1.78	16.00	1.78	22.00	0.76
4.20	1.27	10.20	3.30	16.20	1.27	22.20	0.76
4.40	1.27	10.40	3.30	16.40	1.27	22.40	0.76
4.60	1.27	10.60	3.30	16.60	1.27	22.60	0.76
4.80	1.27	10.80	3.30	16.80	1.27	22.80	0.76
5.00	1.27	11.00	3.30	17.00	1.27	23.00	0.76
5.20	1.27	11.20	4.57	17.20	1.27	23.20	0.76
5.40	1.27	11.40	6.60	17.40	1.27	23.40	0.76
5.60	1.27	11.60	15.24	17.60	1.27	23.60	0.76
5.80	1.27	11.80	33.27	17.80	1.27	23.80	0.76
6.00	1.27	12.00	69.60	18.00	1.27	24.00	0.76

CALIB
NASHYD (0114)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.093 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 22.051
TOTAL RAINFALL (mm)= 62.433
RUNOFF COEFFICIENT = 0.353

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

CALIB
STANDHYD (0084)
ID= 1 DT=12.0 min

Area (ha)= 10.64
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.45	3.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.60	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

TOTALS

PEAK FLOW	(cms)=	1.44	0.24	1.676 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	50.42
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0085)
ID= 1 DT=12.0 min

Area (ha)= 8.54
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	5.55	2.99	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		69.60	32.00	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	1.07	0.22	1.294 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	48.58
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0108)
ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		69.60	32.00	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.04	0.226 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	48.21
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):	1.50	0.23	12.00	48.21
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.50	0.23	12.00	48.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		69.60	32.00	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.13	0.04	0.169 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	44.91
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):	1.21	0.17	12.00	44.91
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.21	0.17	12.00	44.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		69.60	32.00	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	2.12	0.52	2.639 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	47.12
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

ADD HYD (0112)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0114):	2.11	0.093	12.00	22.05
	+ ID2= 2 (0115):	17.98	2.639	12.00	47.12
	ID = 3 (0112):	20.09	2.732	12.00	44.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0112):	20.09	2.732	12.00	44.48
	+ ID2= 2 (0145):	0.00	0.000	0.00	0.00
	ID = 1 (0112):	20.09	2.732	12.00	44.48

*** W A R N I N G : HYDROGRAPH 0145 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0112):	20.09	2.732	12.00	44.48
	+ ID2= 2 (0084):	10.64	1.676	12.00	50.42
	ID = 3 (0112):	30.73	4.407	12.00	46.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0112):	30.73	4.407	12.00	46.54
	+ ID2= 2 (0085):	8.54	1.294	12.00	48.58
	ID = 1 (0112):	39.27	5.702	12.00	46.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0112):	39.27	5.702	12.00	46.98
	+ ID2= 2 (0089):	0.00	0.000	0.00	0.00
	ID = 3 (0112):	39.27	5.702	12.00	46.98

*** W A R N I N G : HYDROGRAPH 0089 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0137) ID= 1 DT=12.0 min | Area (ha)= 1.33 | Curve Number (CN)= 74.0 | Ia (mm)= 5.00 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW	(cms)=	0.079 (i)
TIME TO PEAK	(hrs)=	12.000
RUNOFF VOLUME	(mm)=	18.199
TOTAL RAINFALL	(mm)=	62.433
RUNOFF COEFFICIENT	=	0.292

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

CALIB STANDHYD (0096) ID= 1 DT=12.0 min | Area (ha)= 3.62 | Total Imp(%)= 28.00 | Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.60	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.20	0.19	0.389 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	35.00
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0138) ID= 1 DT=12.0 min | Area (ha)= 1.45 | Total Imp(%)= 64.00 | Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	69.60	32.00
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.18	0.04	0.218 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	48.21
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0136)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0137):	1.33	0.079	12.00	18.20
	+ ID2= 2 (0138):	1.45	0.218	12.00	48.21
	ID = 3 (0136):	2.78	0.297	12.00	33.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0136):	2.78	0.297	12.00	33.85
	+ ID2= 2 (0096):	3.62	0.389	12.00	35.00
	ID = 1 (0136):	6.40	0.685	12.00	34.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0117)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0136)	6.400	0.685	12.00	34.50
OUTFLOW: ID= 1 (0117)	6.400	0.051	13.00	34.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.39
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1187

ROUTE PIPE (0116)		
IN= 2---> OUT= 1	Pipe Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 850.00
	Slope	(m/m)= 0.005
	Manning n	= 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<--pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.05	13.00	34.41	0.10	0.84
OUTFLOW: ID= 1 (0116)	6.40	0.05	13.30	34.41	0.10	0.84

ADD HYD (0111)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0112):	39.27	5.702	12.00	46.98
	+ ID2= 2 (0116):	6.40	0.050	13.30	34.41
	ID = 3 (0111):	45.67	5.721	12.00	45.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	1.4644	1.1181
	0.0392	0.1633	1.6231	1.3201
	0.0901	0.4190	2.0261	1.9685
	0.1513	0.6880	2.6873	2.1410
	0.4982	0.8751	6.1638	2.4992
	0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.670	5.721	12.00	45.24
OUTFLOW: ID= 1 (0110)	45.670	0.993	12.30	45.21

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.36
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 1.0072

DUHYD (0144)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=2.026					
#of Inlets= 1					
Total(cms)= 2.0	TOTAL HYD.(ID= 1):	45.67	0.99	12.30	45.21
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	45.67	0.99	12.30	45.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0081)				
ID= 1 DT=12.0 min	Area (ha)= 1.34	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	1.00	0.34	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	69.60	32.00	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	1.16 (ii)	8.51 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.11	
				TOTALS
	PEAK FLOW (cms)=	0.19	0.02	0.219 (iii)
	TIME TO PEAK (hrs)=	12.00	12.00	12.00
	RUNOFF VOLUME (mm)=	61.43	24.72	52.25
	TOTAL RAINFALL (mm)=	62.43	62.43	62.43
	RUNOFF COEFFICIENT =	0.98	0.40	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0082)				
ID= 1 DT=12.0 min	Area (ha)= 2.51	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	1.88	0.63	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	69.60	32.00	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	1.16 (ii)	8.51 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.11	
				TOTALS
	PEAK FLOW (cms)=	0.36	0.05	0.410 (iii)
	TIME TO PEAK (hrs)=	12.00	12.00	12.00
	RUNOFF VOLUME (mm)=	61.43	24.72	52.25
	TOTAL RAINFALL (mm)=	62.43	62.43	62.43
	RUNOFF COEFFICIENT =	0.98	0.40	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0101)	Area (ha)= 0.47			
ID= 1 DT=12.0 min	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.074 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	50.41
TOTAL RAINFALL	(mm)=	62.43
RUNOFF COEFFICIENT	=	0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0101):	0.47	0.074	12.00	50.41
+ ID2= 2 (0082):	2.51	0.410	12.00	52.25
ID = 3 (0088):	2.98	0.484	12.00	51.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.934				
#of Inlets= 1				
Total(cms)= 0.9				
TOTAL HYD.(ID= 1):	2.98	0.48	12.00	51.96
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.48	12.00	51.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0094)	Area (ha)= 2.25			
ID= 1 DT=12.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 60.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.90
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.328 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	46.75
TOTAL RAINFALL	(mm)=	62.43
RUNOFF COEFFICIENT	=	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0100)	Area (ha)= 1.27			
ID= 1 DT=12.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.197 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	49.68
TOTAL RAINFALL	(mm)=	62.43
RUNOFF COEFFICIENT	=	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0092)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=0.309				
#of Inlets= 1				
Total(cms)= 0.3				
TOTAL HYD.(ID= 1):	1.27	0.20	12.00	49.68
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.27	0.20	12.00	49.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0102)	Area (ha)= 2.71			
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

		TOTALS
PEAK FLOW	(cms)=	0.281 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	33.90
TOTAL RAINFALL	(mm)=	62.43

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     RUNOFF COEFFICIENT   =       0.98          0.40           0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB           |
| STANDHYD  (0103) |   Area     (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28          2.58
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      69.60         32.00
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.63          0.19          0.825 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43         24.72          45.28
     TOTAL RAINFALL   (mm)=      62.43         62.43          62.43
     RUNOFF COEFFICIENT   =       0.98          0.40           0.73

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0102):      2.71   0.281    12.00     33.90
       + ID2= 2 (0103):      5.86   0.825    12.00     45.28
         ==========================================================
         ID = 3 (0104):      8.57   1.106    12.00     41.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0104):      8.57   1.106    12.00     41.68
       + ID2= 2 (0081):      1.34   0.219    12.00     52.25
         ==========================================================
         ID = 1 (0104):      9.91   1.325    12.00     43.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0092 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
         ID1= 1 (0104):      9.91   1.325    12.00     43.11
       + ID2= 2 (0092):      0.00   0.000     0.00      0.00
         ==========================================================
         ID = 3 (0104):      9.91   1.325    12.00     43.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0104):      9.91   1.325    12.00     43.11
       + ID2= 2 (0093):      2.98   0.484    12.00     51.96
         ==========================================================
         ID = 1 (0104):     12.89   1.810    12.00     45.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0104):     12.89   1.810    12.00     45.16
       + ID2= 2 (0094):      2.25   0.328    12.00     46.75
         ==========================================================
         ID = 3 (0104):     15.14   2.137    12.00     45.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB           |
| STANDHYD  (0083) |   Area     (ha)=   3.28
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.30          0.98
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      69.60         32.00
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.44          0.07          0.517 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43         24.72          50.42
     TOTAL RAINFALL   (mm)=      62.43         62.43          62.43
     RUNOFF COEFFICIENT   =       0.98          0.40           0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB           |
| STANDHYD  (0091) |   Area     (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38          1.12
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      69.60         32.00
               over (min)        12.00         12.00
     Storage Coeff.  (min)=       1.16 (ii)     8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.27          0.08          0.349 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43         24.72          44.91
     TOTAL RAINFALL   (mm)=      62.43         62.43          62.43
     RUNOFF COEFFICIENT   =       0.98          0.40           0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
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CN* = 74.0 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.

DUHYD (0090) / Inlet Cap.=0.502 / #of Inlets= 1 / Total(cms)= 0.5	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.35	12.00	44.91
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.35	12.00	44.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB / STANDHYD (0109) / ID= 1 DT=12.0 min	Area (ha)= 10.16	Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	69.60	32.00	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	1.16 (ii)	8.51 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	1.30	0.26	1.552 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	48.95
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0109):	10.16	1.552	12.00	48.95
+ ID2= 2 (0083):	3.28	0.517	12.00	50.42
ID = 3 (0107):	13.44	2.068	12.00	49.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	13.44	2.068	12.00	49.31
+ ID2= 2 (0089):	1.50	0.226	12.00	48.21
ID = 1 (0107):	14.94	2.294	12.00	49.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.94	2.294	12.00	49.20
+ ID2= 2 (0090):	2.50	0.349	12.00	44.91
ID = 3 (0107):	17.44	2.643	12.00	48.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.44	2.643	12.00	48.58
+ ID2= 2 (0092):	1.27	0.197	12.00	49.68
ID = 1 (0107):	18.71	2.840	12.00	48.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106) / IN= 2---> OUT= 1 / DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7020	0.4508
0.0190	0.0711	1.0110	0.9482
0.0360	0.1863	1.0260	0.9798
0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.710	2.840	12.00	48.66
OUTFLOW: ID= 1 (0106)	18.710	0.711	12.20	48.61

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.04
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.4668

ROUTE PIPE (0105) / IN= 2---> OUT= 1 / DT= 5.0 min

PIPE Number	=	1.00
Diameter	(mm)=	1650.00
Length	(m)=	467.00
Slope	(m/m)=	0.006
Manning n	=	0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.71	0.71	12.20	48.61	0.35	2.11
OUTFLOW: ID= 1 (0105)	18.71	0.73	12.20	48.61	0.36	2.12

ADD HYD (0099) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.14	2.137	12.00	45.39
+ ID2= 2 (0105):	18.71	0.726	12.20	48.61
ID = 3 (0099):	33.85	2.333	12.00	47.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)

*** W A R N I N G : HYDROGRAPH 0144 <ID= 2> IS DRY.
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003

ID1= 3 (0099):	33.85	2.333	12.00	47.22
+ ID2= 2 (0144):	0.00	0.000	0.00	0.00
ID = 1 (0099):	33.85	2.333	12.00	47.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.7390	1.4514
	0.0190	0.0906	0.8290	1.8600
	0.0770	0.2799	1.1240	1.9075
	0.2960	0.3787	5.4930	2.2479
	0.3520	0.4123	13.3920	2.4903

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0099)	33.850	2.333	12.00	47.22
OUTFLOW: ID= 1 (0098)	33.850	0.415	13.40	47.18

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.77
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.5808

CALIB NASHYD (0123) ID= 1 DT=12.0 min	Area (ha)= 1.61	Curve Number (CN)= 74.0
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.13	

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.095 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 18.199
TOTAL RAINFALL (mm)= 62.433
RUNOFF COEFFICIENT = 0.292

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

CALIB NASHYD (0124) ID= 1 DT=12.0 min	Area (ha)= 2.59	Curve Number (CN)= 74.0
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22	

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.132 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 21.692
TOTAL RAINFALL (mm)= 62.433
RUNOFF COEFFICIENT = 0.347

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

CALIB STANDHYD (0086) ID= 1 DT=12.0 min	Area (ha)= 10.18	
	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.63	2.55
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	1.48	0.19	1.664 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	52.26
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0087) ID= 1 DT=12.0 min	Area (ha)= 2.21	
	Total Imp(%)= 85.00	Dir. Conn.(%)= 85.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.33
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.36	0.02	0.388 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	55.93
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.90

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0097) ID= 1 DT=12.0 min	Area (ha)= 0.85	
	Total Imp(%)= 28.00	Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		69.60	32.00
over (min)		12.00	12.00
Storage Coeff. (min)=		1.16 (ii)	8.51 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.05	0.05	0.091 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	61.43	24.72	35.00
TOTAL RAINFALL	(mm)=	62.43	62.43	62.43
RUNOFF COEFFICIENT	=	0.98	0.40	0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB           |
| STANDHYD  (0125)|   Area    (ha)=   6.71
|ID= 1 DT=12.0 min|   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      5.37         1.34
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     69.60        32.00
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=      1.04         0.10        1.137 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00       12.00
     RUNOFF VOLUME    (mm)=     61.43        24.72       54.09
     TOTAL RAINFALL   (mm)=     62.43        62.43       62.43
     RUNOFF COEFFICIENT   =      0.98         0.40        0.87

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| ADD HYD   (0122)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0123):     1.61   0.095    12.00    18.20
        + ID2= 2 (0124):     2.59   0.132    12.00    21.69
          ================================================
          ID = 3 (0122):     4.20   0.227    12.00    20.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD   (0122)|
|   3 +  2 =  1   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0122):     4.20   0.227    12.00    20.35
        + ID2= 2 (0125):     6.71   1.137    12.00    54.09
          ================================================
          ID = 1 (0122):    10.91   1.364    12.00    41.10

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD   (0122)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0122):    10.91   1.364    12.00    41.10
        + ID2= 2 (0086):    10.18   1.664    12.00    52.26
          ================================================
          ID = 3 (0122):    21.09   3.028    12.00    46.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD   (0122)|
|   3 +  2 =  1   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0122):    21.09   3.028    12.00    46.49
        + ID2= 2 (0087):     2.21   0.388    12.00    55.93
          ================================================
          ID = 1 (0122):    23.30   3.416    12.00    47.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD   (0122)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0122):    23.30   3.416    12.00    47.38
        + ID2= 2 (0097):     0.85   0.091    12.00    35.00
          ================================================
          ID = 3 (0122):    24.15   3.507    12.00    46.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CALIB           |
| NASHYD    (0131)|   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min|   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.365 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  21.169
     TOTAL RAINFALL   (mm)=  62.433
     RUNOFF COEFFICIENT   =   0.339

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB           |
| STANDHYD  (0128)|   Area    (ha)=   2.34
|ID= 1 DT=12.0 min|   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.29         1.05
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     69.60        32.00
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.25         0.08        0.327 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00       12.00
     RUNOFF VOLUME    (mm)=     61.43        24.72       44.91
     TOTAL RAINFALL   (mm)=     62.43        62.43       62.43
     RUNOFF COEFFICIENT   =      0.98         0.40        0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB           |
| STANDHYD  (0130)|   Area    (ha)=   0.97
|ID= 1 DT=12.0 min|   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.62         0.35
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     69.60        32.00
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.12         0.03        0.146 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00       12.00
     RUNOFF VOLUME    (mm)=     61.43        24.72       48.21
     TOTAL RAINFALL   (mm)=     62.43        62.43       62.43
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     RUNOFF COEFFICIENT   =       0.98         0.40          0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0129) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0128):     2.34   0.327    12.00    44.91
       + ID2= 2 (0130):     0.97   0.146    12.00    48.21
         ================================================
         ID = 3 (0129):     3.31   0.472    12.00    45.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0129) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0129):     3.31   0.472    12.00    45.88
       + ID2= 2 (0131):     6.53   0.365    12.00    21.17
         ================================================
         ID = 1 (0129):     9.84   0.837    12.00    29.48

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0134) |   Area     (ha)=   0.91   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=    0.204

     PEAK FLOW       (cms)=    0.053 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   20.584
     TOTAL RAINFALL   (mm)=   62.433
     RUNOFF COEFFICIENT   =    0.330

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

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| CALIB            |
| STANDHYD  (0095) |   Area     (ha)=   2.95
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.74         2.21
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      69.60        32.00
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.14         0.16          0.306 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43        24.72          33.90
     TOTAL RAINFALL   (mm)=      62.43        62.43          62.43
     RUNOFF COEFFICIENT   =       0.98         0.40           0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0133) |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.18         2.68
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      69.60        32.00
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.81         0.20          1.007 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43        24.72          47.12
     TOTAL RAINFALL   (mm)=      62.43        62.43          62.43
     RUNOFF COEFFICIENT   =       0.98         0.40           0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0135) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36         1.51
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      69.60        32.00
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.16 (ii)    8.51 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.46         0.11          0.568 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      61.43        24.72          47.12
     TOTAL RAINFALL   (mm)=      62.43        62.43          62.43
     RUNOFF COEFFICIENT   =       0.98         0.40           0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0132) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0133):     6.86   1.007    12.00    47.12
       + ID2= 2 (0134):     0.91   0.053    12.00    20.58
         ================================================
         ID = 3 (0132):     7.77   1.060    12.00    44.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0132) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
         ID1= 3 (0132):     7.77   1.060    12.00    44.01
```

+ ID2= 2 (0135):	3.87	0.568	12.00	47.12
ID = 1 (0132):	11.64	1.628	12.00	45.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	1.628	12.00	45.04
+ ID2= 2 (0095):	2.95	0.306	12.00	33.90
ID = 3 (0132):	14.59	1.934	12.00	42.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	1.934	12.00	42.79
OUTFLOW: ID= 1 (0127)	14.590	0.412	12.30	42.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.30
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.2529

ROUTE PIPE (0119)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.41	12.30	42.77	0.28	1.67
OUTFLOW: ID= 1 (0119)	14.59	0.41	12.30	42.77	0.28	1.67

ADD HYD (0118) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.412	12.30	42.77
+ ID2= 2 (0129):	9.84	0.837	12.00	29.48
ID = 3 (0118):	24.43	1.073	12.00	37.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	1.073	12.00	37.45
OUTFLOW: ID= 1 (0126)	24.430	0.401	13.10	37.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 37.38
TIME SHIFT OF PEAK FLOW (min)= 66.00
MAXIMUM STORAGE USED (ha.m.)= 0.2006

ADD HYD (0121) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	24.15	3.507	12.00	46.95
+ ID2= 2 (0126):	24.43	0.401	13.10	37.45
ID = 3 (0121):	48.58	3.703	12.00	42.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	3.703	12.00	42.21
OUTFLOW: ID= 1 (0120)	48.580	0.407	14.70	42.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.99
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.8947

****
** SIMULATION NUMBER: 3 **
****

READ STORM Ptotal= 82.45 mm

Filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-94bc9e57a3dd\0d4474df
Comments: TEN YR SCS STORM 24HR TWELVE MIN TIME ST

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	0.76	6.20	1.78	12.20	92.20	18.20	1.78
0.40	0.76	6.40	1.78	12.40	16.00	18.40	1.78
0.60	0.76	6.60	1.78	12.60	10.16	18.60	1.78
0.80	0.76	6.80	1.78	12.80	7.37	18.80	1.78
1.00	0.76	7.00	1.78	13.00	6.86	19.00	1.78
1.20	0.76	7.20	1.78	13.20	4.83	19.20	1.78
1.40	0.76	7.40	1.78	13.40	4.06	19.40	1.27
1.60	0.76	7.60	1.78	13.60	4.06	19.60	1.27
1.80	0.76	7.80	1.78	13.80	4.06	19.80	1.27
2.00	0.76	8.00	1.78	14.00	4.06	20.00	1.27
2.20	0.76	8.20	1.78	14.20	4.06	20.20	1.27
2.40	0.76	8.40	2.54	14.40	2.54	20.40	1.27
2.60	0.76	8.60	2.54	14.60	2.54	20.60	1.27
2.80	0.76	8.80	2.54	14.80	2.54	20.80	1.27
3.00	0.76	9.00	2.54	15.00	2.54	21.00	1.27
3.20	0.76	9.20	2.54	15.20	2.54	21.20	1.27
3.40	0.76	9.40	2.54	15.40	2.54	21.40	0.76

3.60	0.76	9.60	2.54	15.60	2.54	21.60	0.76
3.80	0.76	9.80	2.54	15.80	2.54	21.80	0.76
4.00	0.76	10.00	2.54	16.00	2.54	22.00	0.76
4.20	0.76	10.20	2.54	16.20	2.54	22.20	0.76
4.40	1.78	10.40	4.57	16.40	1.78	22.40	0.76
4.60	1.78	10.60	4.57	16.60	1.78	22.60	0.76
4.80	1.78	10.80	4.57	16.80	1.78	22.80	0.76
5.00	1.78	11.00	4.57	17.00	1.78	23.00	0.76
5.20	1.78	11.20	4.57	17.20	1.78	23.20	0.76
5.40	1.78	11.40	6.10	17.40	1.78	23.40	0.76
5.60	1.78	11.60	8.89	17.60	1.78	23.60	0.76
5.80	1.78	11.80	20.07	17.80	1.78	23.80	0.76
6.00	1.78	12.00	44.20	18.00	1.78	24.00	0.76

CALIB					
NASHYD (0114)	Area	(ha)=	2.11	Curve Number	(CN)= 74.0
ID= 1 DT=12.0 min	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.26		

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW	(cms)=	0.153 (i)
TIME TO PEAK	(hrs)=	12.200
RUNOFF VOLUME	(mm)=	35.282
TOTAL RAINFALL	(mm)=	82.446
RUNOFF COEFFICIENT	=	0.428

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

CALIB				
STANDHYD (0084)	Area	(ha)=	10.64	
ID= 1 DT=12.0 min	Total Imp	(%)=	70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.45	3.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.91 0.39 2.298 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 68.56
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0085)	Area	(ha)=	8.54	
ID= 1 DT=12.0 min	Total Imp	(%)=	65.00	Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.55	2.99
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.42 0.37 1.788 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 66.41
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0108)	Area	(ha)=	1.50	
ID= 1 DT=12.0 min	Total Imp	(%)=	64.00	Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.25 0.07 0.312 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 65.98
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)				
Inlet Cap.=0.350				
#of Inlets= 1				
Total(cms)= 0.3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.31	12.20	65.98
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.50	0.31	12.20	65.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0113)	Area	(ha)=	1.21	
ID= 1 DT=12.0 min	Total Imp	(%)=	55.00	Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.17 0.07 0.237 (iii)
TIME TO PEAK	(hrs)=	12.20 12.20 12.20
RUNOFF VOLUME	(mm)=	81.45 38.50 62.12
TOTAL RAINFALL	(mm)=	82.45 82.45 82.45
RUNOFF COEFFICIENT	=	0.99 0.47 0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.169		(ha)	(cms)	(hrs)	(mm)
#of Inlets= 1	TOTAL HYD.(ID= 1):	1.21	0.24	12.20	62.12
Total(cms)= 0.2	MAJOR SYS.(ID= 2):	0.08	0.07	12.20	62.12
	MINOR SYS.(ID= 3):	1.13	0.17	12.20	62.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0115) ID= 1 DT=12.0 min	Area (ha)= 17.98 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00			
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	10.97	7.01	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	92.20	50.35	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.12	
				TOTALS
	PEAK FLOW (cms)=	2.81	0.86	3.668 (iii)
	TIME TO PEAK (hrs)=	12.20	12.20	12.20
	RUNOFF VOLUME (mm)=	81.45	38.50	64.70
	TOTAL RAINFALL (mm)=	82.45	82.45	82.45
	RUNOFF COEFFICIENT =	0.99	0.47	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.153	12.20	35.28
+ ID2= 2 (0115):	17.98	3.668	12.20	64.70
ID = 3 (0112):	20.09	3.821	12.20	61.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	20.09	3.821	12.20	61.61
+ ID2= 2 (0145):	0.08	0.068	12.20	62.12
ID = 1 (0112):	20.17	3.889	12.20	61.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	20.17	3.889	12.20	61.61
+ ID2= 2 (0084):	10.64	2.298	12.20	68.56
ID = 3 (0112):	30.81	6.187	12.20	64.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	30.81	6.187	12.20	64.01
+ ID2= 2 (0085):	8.54	1.788	12.20	66.41
ID = 1 (0112):	39.35	7.975	12.20	64.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0089 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001				
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001				
ID1= 1 (0112):	39.35	7.975	12.20	64.53
+ ID2= 2 (0089):	0.00	0.000	0.00	0.00
ID = 3 (0112):	39.35	7.975	12.20	64.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0137) ID= 1 DT=12.0 min	Area (ha)= 1.33 Ia (mm)= 5.00 U.H. Tp(hrs)= 0.13	Curve Number (CN)= 74.0 # of Linear Res.(N)= 3.00
Unit Hyd Qpeak (cms)=	0.391	
PEAK FLOW (cms)=	0.128 (i)	
TIME TO PEAK (hrs)=	12.200	
RUNOFF VOLUME (mm)=	29.119	
TOTAL RAINFALL (mm)=	82.446	
RUNOFF COEFFICIENT =	0.353	

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

CALIB STANDHYD (0096) ID= 1 DT=12.0 min	Area (ha)= 3.62 Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00			
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	1.01	2.61	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	92.20	50.35	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.12	
				TOTALS
	PEAK FLOW (cms)=	0.26	0.32	0.579 (iii)
	TIME TO PEAK (hrs)=	12.20	12.20	12.20
	RUNOFF VOLUME (mm)=	81.45	38.50	50.52
	TOTAL RAINFALL (mm)=	82.45	82.45	82.45
	RUNOFF COEFFICIENT =	0.99	0.47	0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

```
-------------------
| CALIB             |
| STANDHYD  (0138)  |   Area    (ha)=   1.45
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.93         0.52
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     92.20        50.35
           over (min)       =    12.00        12.00
     Storage Coeff.  (min)=      1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.24         0.06          0.302 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.20          12.20
     RUNOFF VOLUME    (mm)=     81.45        38.50          65.98
     TOTAL RAINFALL   (mm)=     82.45        82.45          82.45
     RUNOFF COEFFICIENT    =     0.99         0.47           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
-------------------
| ADD HYD   (0136)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0137):     1.33   0.128    12.20    29.12
       + ID2= 2 (0138):     1.45   0.302    12.20    65.98
         ================================================
         ID = 3 (0136):     2.78   0.429    12.20    48.35

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

```
-------------------
| ADD HYD   (0136)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0136):     2.78   0.429    12.20    48.35
       + ID2= 2 (0096):     3.62   0.579    12.20    50.52
         ================================================
         ID = 1 (0136):     6.40   1.008    12.20    49.58

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

```
-------------------
| RESERVOIR (0117)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------        (cms)     (ha.m.)     |    (cms)     (ha.m.)
                           0.0000     0.0000     |   0.3260      0.8017
                           0.0790     0.1850     |   0.3960      0.9004
                           0.2270     0.3947     |   0.0000      0.0000

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0136)      6.400     1.008     12.20     49.58
     OUTFLOW: ID= 1 (0117)      6.400     0.074     13.10     49.49

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.33
                   TIME SHIFT OF PEAK FLOW          (min)= 54.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  0.1732
```

```
-------------------
| ROUTE PIPE (0116) |     PIPE Number      =   1.00
| IN= 2---> OUT= 1  |     Diameter     (mm)=1650.00
| DT=  5.0 min      |     Length        (m)= 850.00
-------------------       Slope       (m/m)=  0.005
                          Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
```

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

```
                                <---- hydrograph ---->   <-pipe / channel->
                                AREA    QPEAK   TPEAK   R.V.   MAX DEPTH  MAX VEL
                                (ha)    (cms)   (hrs)   (mm)     (m)       (m/s)
     INFLOW : ID= 2 (0117)     6.40     0.07   13.10  49.49      0.12       0.91
     OUTFLOW: ID= 1 (0116)     6.40     0.07   13.40  49.48      0.12       0.91
```

```
-------------------
| ADD HYD   (0111)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0112):     39.35   7.975    12.20    64.53
       + ID2= 2 (0116):     6.40    0.073    13.40    49.48
         ================================================
         ID = 3 (0111):     45.75   8.004    12.20    62.45

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

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-------------------
| RESERVOIR (0110)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------        (cms)     (ha.m.)     |    (cms)     (ha.m.)
                           0.0000     0.0000     |   1.4644      1.1181
                           0.0392     0.1633     |   1.6231      1.3201
                           0.0901     0.4190     |   2.0261      1.9685
                           0.1513     0.6880     |   2.6873      2.1410
                           0.4982     0.8751     |   6.1638      2.4992
                           0.6461     0.9229     |   0.0000      0.0000

                                AREA     QPEAK     TPEAK      R.V.
                                (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0111)     45.749     8.004     12.20     62.45
     OUTFLOW: ID= 1 (0110)     45.749     1.628     12.50     62.42

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 20.34
                   TIME SHIFT OF PEAK FLOW          (min)= 18.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  1.3303
```

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-------------------
| DUHYD     (0144)  |
| Inlet Cap.=2.026  |
| #of Inlets=    1  |
| Total(cms)=  2.0  |      AREA     QPEAK     TPEAK     R.V.
-------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   45.75      1.63     12.50    62.42
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   45.75      1.63     12.50    62.42

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

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-------------------
| CALIB             |
| STANDHYD  (0081)  |   Area    (ha)=   1.34
|ID= 1 DT=12.0 min  |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.00         0.34
     Dep. Storage     (mm)=      1.00         1.50
```

Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.26	0.04 0.298 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 70.70
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0082) | Area (ha)= 2.51
ID= 1 DT=12.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.48	0.08 0.559 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 70.71
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.86

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0101) | Area (ha)= 0.47
ID= 1 DT=12.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.08	0.02 0.102 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 68.55
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	0.47	0.102	12.20	68.55
+ ID2= 2 (0082):	2.51	0.559	12.20	70.71
ID = 3 (0088):	2.98	0.661	12.20	70.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)
Inlet Cap.=0.934
#of Inlets= 1
Total(cms)= 0.9

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.66	12.20	70.37
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.66	12.20	70.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0094) | Area (ha)= 2.25
ID= 1 DT=12.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.90
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.35	0.11 0.456 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 64.27
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0100) | Area (ha)= 1.27
ID= 1 DT=12.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		92.20	50.35
over (min)		12.00	12.00
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.22	0.05 0.271 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 67.70

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     TOTAL RAINFALL   (mm)=      82.45        82.45          82.45
     RUNOFF COEFFICIENT   =       0.99         0.47           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0092) |
| Inlet Cap.=0.309 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.27     12.20   67.70
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.27      0.27     12.20   67.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0102)  |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.68         2.03
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     92.20        50.35
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.17         0.25      0.422 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.20     12.20
     RUNOFF VOLUME    (mm)=     81.45        38.50     49.24
     TOTAL RAINFALL   (mm)=     82.45        82.45     82.45
     RUNOFF COEFFICIENT   =      0.99         0.47      0.60

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0103)  |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min  |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      3.28         2.58
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     92.20        50.35
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.04 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.84         0.32      1.156 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.20     12.20
     RUNOFF VOLUME    (mm)=     81.45        38.50     62.55
     TOTAL RAINFALL   (mm)=     82.45        82.45     82.45
     RUNOFF COEFFICIENT   =      0.99         0.47      0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0104) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0102):     2.71   0.422    12.20     49.24
        + ID2= 2 (0103):     5.86   1.156    12.20     62.55
          ==================================================
          ID = 3 (0104):     8.57   1.579    12.20     58.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0104):     8.57   1.579    12.20     58.34
        + ID2= 2 (0081):     1.34   0.298    12.20     70.70
          ==================================================
          ID = 1 (0104):     9.91   1.877    12.20     60.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0092 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0104):     9.91   1.877    12.20     60.01
        + ID2= 2 (0092):     0.00   0.000     0.00      0.00
          ==================================================
          ID = 3 (0104):     9.91   1.877    12.20     60.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0104):     9.91   1.877    12.20     60.01
        + ID2= 2 (0093):     2.98   0.661    12.20     70.37
          ==================================================
          ID = 1 (0104):    12.89   2.538    12.20     62.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0104):    12.89   2.538    12.20     62.41
        + ID2= 2 (0094):     2.25   0.456    12.20     64.27
          ==================================================
          ID = 3 (0104):    15.14   2.994    12.20     62.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD  (0083)  |   Area    (ha)=   3.28
|ID= 1 DT=12.0 min  |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      2.30         0.98
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =     0.013        0.250
```

Max.Eff.Inten.(mm/hr)=	92.20	50.35		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.59	0.12	0.709 (iii)	
TIME TO PEAK (hrs)=	12.20	12.20	12.20	
RUNOFF VOLUME (mm)=	81.45	38.50	68.56	
TOTAL RAINFALL (mm)=	82.45	82.45	82.45	
RUNOFF COEFFICIENT =	0.99	0.47	0.83	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0091) | Area (ha)= 2.50
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.38	1.12
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

Max.Eff.Inten.(mm/hr)=	92.20	50.35		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	0.35	0.14	0.490 (iii)	
TIME TO PEAK (hrs)=	12.20	12.20	12.20	
RUNOFF VOLUME (mm)=	81.45	38.50	62.12	
TOTAL RAINFALL (mm)=	82.45	82.45	82.45	
RUNOFF COEFFICIENT =	0.99	0.47	0.75	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)
Inlet Cap.=0.502
#of Inlets= 1
Total(cms)= 0.5

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.49	12.20	62.12
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.50	0.49	12.20	62.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0109) | Area (ha)= 10.16
ID= 1 DT=12.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 66.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	6.71	3.45
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250

Max.Eff.Inten.(mm/hr)=	92.20	50.35		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.04 (ii)	7.17 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	1.72	0.42	2.140 (iii)	
TIME TO PEAK (hrs)=	12.20	12.20	12.20	
RUNOFF VOLUME (mm)=	81.45	38.50	66.84	
TOTAL RAINFALL (mm)=	82.45	82.45	82.45	
RUNOFF COEFFICIENT =	0.99	0.47	0.81	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0109):	10.16	2.140	12.20	66.84
+ ID2= 2 (0083):	3.28	0.709	12.20	68.56
ID = 3 (0107):	13.44	2.849	12.20	67.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	13.44	2.849	12.20	67.26
+ ID2= 2 (0089):	1.50	0.312	12.20	65.98
ID = 1 (0107):	14.94	3.161	12.20	67.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.94	3.161	12.20	67.13
+ ID2= 2 (0090):	2.50	0.490	12.20	62.12
ID = 3 (0107):	17.44	3.651	12.20	66.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.44	3.651	12.20	66.42
+ ID2= 2 (0092):	1.27	0.271	12.20	67.70
ID = 1 (0107):	18.71	3.922	12.20	66.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7020	0.4508
0.0190	0.0711	1.0110	0.9482
0.0360	0.1863	1.0260	0.9798
0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.710	3.922	12.20	66.50
OUTFLOW: ID= 1 (0106)	18.710	0.813	12.40	66.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.74
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.6303

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| ROUTE PIPE (0105)|      PIPE Number      =   1.00
| IN= 2---> OUT= 1 |      Diameter    (mm)=1650.00
| DT=  5.0 min     |      Length       (m)= 467.00
-------------------      Slope      (m/m)=  0.006
                         Manning n      =  0.013

     <----------------- TRAVEL TIME TABLE ---------------------->
       DEPTH      VOLUME     FLOW RATE    VELOCITY     TRAV.TIME
         (m)      (cu.m.)      (cms)        (m/s)         min
       0.09     .201E+02       0.0          0.88          8.87
       0.17     .560E+02       0.2          1.37          5.68
       0.26     .101E+03       0.4          1.76          4.42
       0.35     .153E+03       0.7          2.09          3.72
       0.43     .210E+03       1.1          2.38          3.27
       0.52     .270E+03       1.5          2.64          2.95
       0.61     .334E+03       2.0          2.86          2.72
       0.69     .399E+03       2.6          3.06          2.55
       0.78     .466E+03       3.2          3.23          2.41
       0.87     .533E+03       3.9          3.38          2.31
       0.96     .599E+03       4.5          3.50          2.22
       1.04     .665E+03       5.1          3.60          2.16
       1.13     .728E+03       5.7          3.68          2.11
       1.22     .789E+03       6.3          3.74          2.08
       1.30     .846E+03       6.8          3.76          2.07
       1.39     .897E+03       7.2          3.76          2.07
       1.48     .943E+03       7.5          3.72          2.09
       1.56     .978E+03       7.6          3.63          2.15
       1.65     .999E+03       7.1          3.30          2.36
                                <---- hydrograph ---->   <-pipe / channel->
                          AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                           (ha)    (cms)    (hrs)    (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0106)   18.71     0.81   12.40  66.45      0.38      2.18
     OUTFLOW: ID= 1 (0105)   18.71     0.81   12.50  66.45      0.38      2.18

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-------------------
| ADD HYD   (0099) |
|  1 +  2 =  3     |          AREA    QPEAK     TPEAK     R.V.
-------------------           (ha)    (cms)     (hrs)      (mm)
          ID1= 1 (0104):    15.14    2.994     12.20     62.68
        + ID2= 2 (0105):    18.71    0.814     12.50     66.45
          ================================================
          ID = 3 (0099):    33.85    3.636     12.20     64.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0099) |
|  3 +  2 =  1     |          AREA    QPEAK     TPEAK     R.V.
-------------------           (ha)    (cms)     (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0144 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0099):    33.85    3.636     12.20     64.81
        + ID2= 2 (0144):     0.00    0.000      0.00      0.00
          ================================================
          ID = 1 (0099):    33.85    3.636     12.20     64.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0098) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------        (cms)     (ha.m.)    |     (cms)     (ha.m.)
                           0.0000     0.0000    |    0.7390      1.4514
                           0.0190     0.0906    |    0.8290      1.8600
                           0.0770     0.2799    |    1.1240      1.9075
                           0.2960     0.3787    |    5.4930      2.2479
                           0.3520     0.4123    |   13.3920      2.4903

                                AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0099)     33.850     3.636     12.20      64.81
     OUTFLOW: ID= 1 (0098)     33.850     0.533     14.20      64.78

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.65
                TIME SHIFT OF PEAK FLOW          (min)=120.00

                MAXIMUM  STORAGE   USED       (ha.m.)=  0.8977

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-------------------
| CALIB            |
| NASHYD    (0123) |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.155 (i)
     TIME TO PEAK    (hrs)=  12.200
     RUNOFF VOLUME    (mm)=  29.119
     TOTAL RAINFALL   (mm)=  82.446
     RUNOFF COEFFICIENT    =   0.353

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

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-------------------
| CALIB            |
| NASHYD    (0124) |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.216 (i)
     TIME TO PEAK    (hrs)=  12.200
     RUNOFF VOLUME    (mm)=  34.708
     TOTAL RAINFALL   (mm)=  82.446
     RUNOFF COEFFICIENT    =   0.421

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

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-------------------
| CALIB            |
| STANDHYD  (0086) |   Area     (ha)=  10.18
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        7.63          2.55
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       92.20         50.35
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.04 (ii)     7.17 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        1.96          0.31          2.267 (iii)
     TIME TO PEAK    (hrs)=       12.20         12.20         12.20
     RUNOFF VOLUME    (mm)=       81.45         38.50         70.71
     TOTAL RAINFALL   (mm)=       82.45         82.45         82.45
     RUNOFF COEFFICIENT    =       0.99          0.47          0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0087) |   Area     (ha)=   2.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  85.00   Dir. Conn.(%)=  85.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.88          0.33
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       92.20         50.35
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.04 (ii)     7.17 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
```

Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.48	0.04 0.522 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 75.00
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.91

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0097)
ID= 1 DT=12.0 min

Area (ha)= 0.85
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.06	0.07 0.136 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 50.52
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.61

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0125)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.37	1.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	92.20	50.35
over	(min)	12.00	12.00
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	1.37	0.16 1.539 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20 12.20
RUNOFF VOLUME	(mm)=	81.45	38.50 72.86
TOTAL RAINFALL	(mm)=	82.45	82.45 82.45
RUNOFF COEFFICIENT	=	0.99	0.47 0.88

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0122)

1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0123):		1.61	0.155	12.20	29.12
+ ID2= 2 (0124):		2.59	0.216	12.20	34.71
ID = 3 (0122):		4.20	0.370	12.20	32.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)

3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):		4.20	0.370	12.20	32.57
+ ID2= 2 (0125):		6.71	1.539	12.20	72.86
ID = 1 (0122):		10.91	1.909	12.20	57.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)

1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):		10.91	1.909	12.20	57.35
+ ID2= 2 (0086):		10.18	2.267	12.20	70.71
ID = 3 (0122):		21.09	4.176	12.20	63.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)

3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):		21.09	4.176	12.20	63.80
+ ID2= 2 (0087):		2.21	0.522	12.20	75.00
ID = 1 (0122):		23.30	4.698	12.20	64.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)

1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):		23.30	4.698	12.20	64.86
+ ID2= 2 (0097):		0.85	0.136	12.20	50.52
ID = 3 (0122):		24.15	4.834	12.20	64.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0131)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.595 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 33.872
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.411

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

CALIB
STANDHYD (0128)
ID= 1 DT=12.0 min

Area (ha)= 2.34
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05

ADD HYD (0122)

Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.33	0.13	0.459 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	62.12
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0130) | Area (ha)= 0.97
ID= 1 DT=12.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.62	0.35	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.16	0.04	0.202 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	65.98
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0128):	2.34	0.459	12.20	62.12
+ ID2= 2 (0130):	0.97	0.202	12.20	65.98
ID = 3 (0129):	3.31	0.660	12.20	63.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0129):	3.31	0.660	12.20	63.25
+ ID2= 2 (0131):	6.53	0.595	12.20	33.87
ID = 1 (0129):	9.84	1.255	12.20	43.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0134) | Area (ha)= 0.91 Curve Number (CN)= 74.0
ID= 1 DT=12.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW (cms)= 0.087 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 32.935
TOTAL RAINFALL (mm)= 82.446
RUNOFF COEFFICIENT = 0.399

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

CALIB
STANDHYD (0095) | Area (ha)= 2.95
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.74	2.21	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.27	0.460 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	49.24
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.60

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0133) | Area (ha)= 6.86
ID= 1 DT=12.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		92.20	50.35	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.07	0.33	1.399 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	64.70
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0135) | Area (ha)= 3.87
ID= 1 DT=12.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.36	1.51	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	92.20	50.35	
over	(min)	12.00	12.00	
Storage Coeff.	(min)=	1.04 (ii)	7.17 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.60	0.18	0.789 (iii)
TIME TO PEAK	(hrs)=	12.20	12.20	12.20
RUNOFF VOLUME	(mm)=	81.45	38.50	64.70
TOTAL RAINFALL	(mm)=	82.45	82.45	82.45
RUNOFF COEFFICIENT	=	0.99	0.47	0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0132)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0133):	6.86	1.399	12.20	64.70
+ ID2= 2 (0134):	0.91	0.087	12.20	32.93
ID = 3 (0132):	7.77	1.486	12.20	60.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0132):	7.77	1.486	12.20	60.98
+ ID2= 2 (0135):	3.87	0.789	12.20	64.70
ID = 1 (0132):	11.64	2.276	12.20	62.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	2.276	12.20	62.21
+ ID2= 2 (0095):	2.95	0.460	12.20	49.24
ID = 3 (0132):	14.59	2.735	12.20	59.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	2.735	12.20	59.59
OUTFLOW: ID= 1 (0127)	14.590	0.535	12.50	59.57

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.58
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.3581

ROUTE PIPE (0119)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.54	12.50	59.57	0.32	1.80
OUTFLOW: ID= 1 (0119)	14.59	0.54	12.50	59.57	0.32	1.80

ADD HYD (0118)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.536	12.50	59.57
+ ID2= 2 (0129):	9.84	1.255	12.20	43.75
ID = 3 (0118):	24.43	1.624	12.20	53.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	1.624	12.20	53.24
OUTFLOW: ID= 1 (0126)	24.430	0.506	13.60	53.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 31.19
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.3083

ADD HYD (0121)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	24.15	4.834	12.20	64.35
+ ID2= 2 (0126):	24.43	0.506	13.60	53.24
ID = 3 (0121):	48.58	5.198	12.20	58.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1

DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4220	0.9546
	0.0430	0.1534	0.6790	1.3320
	0.0850	0.4277	0.9700	1.6432
	0.2830	0.6181	3.4180	1.8082
	0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	5.198	12.20	58.81
OUTFLOW: ID= 1 (0120)	48.580	0.595	15.20	58.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.45
TIME SHIFT OF PEAK FLOW (min)=180.00
MAXIMUM STORAGE USED (ha.m.)= 1.2087

****
** SIMULATION NUMBER: 4 **
****

READ STORM | Filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-94bc9e57a3dd\05dd739c
Ptotal= 95.96 mm | Comments: TWENTYFIVE YR SCS STORM WITH A TWELVE MI

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	1.02	6.20	2.03	12.20	18.80	18.20	2.03
0.40	1.02	6.40	2.03	12.40	11.68	18.40	2.03
0.60	1.02	6.60	2.03	12.60	8.38	18.60	2.03
0.80	1.02	6.80	2.03	12.80	8.13	18.80	2.03
1.00	1.02	7.00	2.03	13.00	5.59	19.00	2.03
1.20	1.02	7.20	2.03	13.20	4.83	19.20	1.52
1.40	1.02	7.40	2.03	13.40	4.83	19.40	1.52
1.60	1.02	7.60	2.03	13.60	4.83	19.60	1.52
1.80	1.02	7.80	2.03	13.80	4.83	19.80	1.52
2.00	1.02	8.00	2.03	14.00	4.83	20.00	1.52
2.20	1.02	8.20	2.79	14.20	2.79	20.20	1.52
2.40	1.02	8.40	2.79	14.40	2.79	20.40	1.52
2.60	1.02	8.60	2.79	14.60	2.79	20.60	1.52
2.80	1.02	8.80	2.79	14.80	2.79	20.80	1.52
3.00	1.02	9.00	2.79	15.00	2.79	21.00	1.52
3.20	1.02	9.20	2.79	15.20	2.79	21.20	1.02
3.40	1.02	9.40	2.79	15.40	2.79	21.40	1.02
3.60	1.02	9.60	2.79	15.60	2.79	21.60	1.02
3.80	1.02	9.80	2.79	15.80	2.79	21.80	1.02
4.00	1.02	10.00	2.79	16.00	2.79	22.00	1.02
4.20	2.03	10.20	5.08	16.20	2.03	22.20	1.02
4.40	2.03	10.40	5.08	16.40	2.03	22.40	1.02
4.60	2.03	10.60	5.08	16.60	2.03	22.60	1.02
4.80	2.03	10.80	5.08	16.80	2.03	22.80	1.02
5.00	2.03	11.00	5.08	17.00	2.03	23.00	1.02
5.20	2.03	11.20	7.11	17.20	2.03	23.20	1.02
5.40	2.03	11.40	10.41	17.40	2.03	23.40	1.02
5.60	2.03	11.60	23.37	17.60	2.03	23.60	1.02
5.80	2.03	11.80	51.56	17.80	2.03	23.80	1.02
6.00	2.03	12.00	107.44	18.00	2.03	24.00	1.02

CALIB NASHYD (0114) ID= 1 DT=12.0 min | Area (ha)= 2.11 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.196 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 45.021
TOTAL RAINFALL (mm)= 95.961
RUNOFF COEFFICIENT = 0.469

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

CALIB STANDHYD (0084) ID= 1 DT=12.0 min | Area (ha)= 10.64 | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.45	3.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	2.22	0.50 2.726 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 81.04
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0085) ID= 1 DT=12.0 min | Area (ha)= 8.54 | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.55	2.99
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	1.66	0.47 2.128 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 78.72
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0108) ID= 1 DT=12.0 min | Area (ha)= 1.50 | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.29	0.09 0.372 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 78.26
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.82

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.37	12.00	78.26
MAJOR SYS.(ID= 2):	0.02	0.02	12.00	78.26
MINOR SYS.(ID= 3):	1.48	0.35	12.00	78.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113) Area (ha)= 1.21
ID= 1 DT=12.0 min Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.285 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	74.08
TOTAL RAINFALL	(mm)=	95.96
RUNOFF COEFFICIENT	=	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.28	12.00	74.08
MAJOR SYS.(ID= 2):	0.11	0.12	12.00	74.08
MINOR SYS.(ID= 3):	1.10	0.17	12.00	74.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115) Area (ha)= 17.98
ID= 1 DT=12.0 min Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	4.380 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	76.87
TOTAL RAINFALL	(mm)=	95.96
RUNOFF COEFFICIENT	=	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.196	12.00	45.02
+ ID2= 2 (0115):	17.98	4.380	12.00	76.87
ID = 3 (0112):	20.09	4.575	12.00	73.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	20.09	4.575	12.00	73.52
+ ID2= 2 (0145):	0.11	0.116	12.00	74.08
ID = 1 (0112):	20.20	4.691	12.00	73.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	20.20	4.691	12.00	73.53
+ ID2= 2 (0084):	10.64	2.726	12.00	81.04
ID = 3 (0112):	30.84	7.417	12.00	76.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	30.84	7.417	12.00	76.12
+ ID2= 2 (0085):	8.54	2.128	12.00	78.72
ID = 1 (0112):	39.38	9.546	12.00	76.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	39.38	9.546	12.00	76.69
+ ID2= 2 (0089):	0.02	0.022	12.00	78.26
ID = 3 (0112):	39.40	9.567	12.00	76.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0137) Area (ha)= 1.33 Curve Number (CN)= 74.0
ID= 1 DT=12.0 min Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

```
     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.163 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  37.157
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.387

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

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--------------------
| CALIB            |
| STANDHYD  (0096) |   Area     (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.01         2.61
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
           over (min)             12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.30         0.41          0.714 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      94.96        48.57          61.56
     TOTAL RAINFALL   (mm)=      95.96        95.96          95.96
     RUNOFF COEFFICIENT   =       0.99         0.51           0.64

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0138) |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.93         0.52
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
           over (min)             12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.28         0.08          0.359 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      94.96        48.57          78.26
     TOTAL RAINFALL   (mm)=      95.96        95.96          95.96
     RUNOFF COEFFICIENT   =       0.99         0.51           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0136) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0137):     1.33   0.163    12.00    37.16
       + ID2= 2 (0138):     1.45   0.359    12.00    78.26
         ================================================
         ID = 3 (0136):     2.78   0.522    12.00    58.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0136) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0136):     2.78   0.522    12.00    58.60
       + ID2= 2 (0096):     3.62   0.714    12.00    61.56
         ================================================
         ID = 1 (0136):     6.40   1.236    12.00    60.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0117) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.3260     0.8017
                         0.0790     0.1850     |   0.3960     0.9004
                         0.2270     0.3947     |   0.0000     0.0000

                              AREA     QPEAK     TPEAK        R.V.
                              (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0136)    6.400     1.236     12.00       60.27
     OUTFLOW: ID= 1 (0117)    6.400     0.096     12.90       60.18

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.74
                   TIME SHIFT OF PEAK FLOW          (min)= 54.00
                   MAXIMUM  STORAGE   USED        (ha.m.)=  0.2086

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--------------------
| ROUTE PIPE (0116)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 850.00
--------------------     Slope      (m/m)=  0.005
                         Manning n        =  0.013

     <---------- TRAVEL TIME TABLE ---------->
       DEPTH      VOLUME    FLOW RATE    VELOCITY     TRAV.TIME
        (m)      (cu.m.)      (cms)        (m/s)         min
       0.09     .367E+02       0.0         0.80         17.68
       0.17     .102E+03       0.1         1.25         11.33
       0.26     .184E+03       0.3         1.61          8.81
       0.35     .278E+03       0.6         1.91          7.41
       0.43     .382E+03       1.0         2.18          6.51
       0.52     .492E+03       1.4         2.41          5.88
       0.61     .608E+03       1.9         2.61          5.43
       0.69     .727E+03       2.4         2.79          5.08
       0.78     .848E+03       2.9         2.95          4.81
       0.87     .970E+03       3.5         3.08          4.60
       0.96     .109E+04       4.1         3.20          4.43
       1.04     .121E+04       4.7         3.29          4.31
       1.13     .133E+04       5.2         3.36          4.22
       1.22     .144E+04       5.8         3.41          4.15
       1.30     .154E+04       6.2         3.44          4.12
       1.39     .163E+04       6.6         3.43          4.13
       1.48     .172E+04       6.9         3.40          4.17
       1.56     .178E+04       6.9         3.31          4.28
       1.65     .182E+04       6.5         3.02          4.70
                                   <---- hydrograph ---->   <-pipe / channel->
                              AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                              (ha)    (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0117)    6.40     0.10    12.90  60.18      0.13      0.99
     OUTFLOW: ID= 1 (0116)    6.40     0.09    13.10  60.18      0.13      0.98

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| ADD HYD   (0111) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0112):    39.40   9.567    12.00    76.69
       + ID2= 2 (0116):     6.40   0.095    13.10    60.18
         ================================================
         ID = 3 (0111):    45.80   9.603    12.00    74.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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RESERVOIR (0110)	IN= 2---> OUT= 1	DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.4644	1.1181
0.0392	0.1633	1.6231	1.3201
0.0901	0.4190	2.0261	1.9685
0.1513	0.6880	2.6873	2.1410
0.4982	0.8751	6.1638	2.4992
0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.802	9.603	12.00	74.40
OUTFLOW: ID= 1 (0110)	45.802	1.776	12.30	74.38

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.50
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 1.5671

DUHYD (0144)	Inlet Cap.=2.026	#of Inlets= 1	Total(cms)= 2.0

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	45.80	1.78	12.30	74.38
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	45.80	1.78	12.30	74.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (0081)	ID= 1 DT=12.0 min

Area (ha)= 1.34 Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.00	0.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.30	0.05	0.353 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	83.36
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.87

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	STANDHYD (0082)	ID= 1 DT=12.0 min

Area (ha)= 2.51 Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.56	0.10	0.661 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	83.36
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.87

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB	STANDHYD (0101)	ID= 1 DT=12.0 min

Area (ha)= 0.47 Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.10	0.02	0.120 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	81.04
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)	1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	0.47	0.120	12.00	81.04
+ ID2= 2 (0082):	2.51	0.661	12.00	83.36
ID = 3 (0088):	2.98	0.781	12.00	83.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)	Inlet Cap.=0.934	#of Inlets= 1	Total(cms)= 0.9

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.78	12.00	83.00
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.78	12.00	83.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (0094)	ID= 1 DT=12.0 min

Area (ha)= 2.25 Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.90
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00

Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	107.44	63.42	
over (min)		12.00	12.00	
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	12.00	
Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.40	0.14	0.545 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	76.40
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0100) | Area (ha)= 1.27
ID= 1 DT=12.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	107.44	63.42
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.26	0.06 0.322 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 80.12
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0092)
Inlet Cap.=0.309
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.32	12.00	80.12
MAJOR SYS.(ID= 2):	0.01	0.01	12.00	80.12
MINOR SYS.(ID= 3):	1.26	0.31	12.00	80.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0102) | Area (ha)= 2.71
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	107.44	63.42
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.20	0.32 0.523 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 60.17
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0103) | Area (ha)= 5.86
ID= 1 DT=12.0 min | Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	107.44	63.42
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.98	0.41 1.386 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	94.96	48.57 74.55
TOTAL RAINFALL	(mm)=	95.96	95.96 95.96
RUNOFF COEFFICIENT	=	0.99	0.51 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0102):		2.71	0.523	12.00	60.17
+ ID2= 2 (0103):		5.86	1.386	12.00	74.55
ID = 3 (0104):		8.57	1.909	12.00	70.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
3 + 2 = 1

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0104):		8.57	1.909	12.00	70.00
+ ID2= 2 (0081):		1.34	0.353	12.00	83.36
ID = 1 (0104):		9.91	2.262	12.00	71.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):		9.91	2.262	12.00	71.81
+ ID2= 2 (0092):		0.01	0.013	12.00	80.12
ID = 3 (0104):		9.92	2.275	12.00	71.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0104):	9.92	2.275	12.00	71.82
	+ ID2= 2 (0093):	2.98	0.781	12.00	83.00
	ID = 1 (0104):	12.90	3.056	12.00	74.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	12.90	3.056	12.00	74.40
	+ ID2= 2 (0094):	2.25	0.545	12.00	76.40
	ID = 3 (0104):	15.15	3.601	12.00	74.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0083) ID= 1 DT=12.0 min | Area (ha)= 3.28 | Total Imp(%)= 70.00 | Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.30	0.98
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.840 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	81.04
TOTAL RAINFALL	(mm)=	95.96
RUNOFF COEFFICIENT	=	0.84

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0091) ID= 1 DT=12.0 min | Area (ha)= 2.50 | Total Imp(%)= 55.00 | Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.588 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	74.08
TOTAL RAINFALL	(mm)=	95.96
RUNOFF COEFFICIENT	=	0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090) | Inlet Cap.=0.502 | #of Inlets= 1 | Total(cms)= 0.5

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.59	12.00	74.08
MAJOR SYS.(ID= 2):	0.08	0.09	12.00	74.08
MINOR SYS.(ID= 3):	2.42	0.50	12.00	74.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0109) ID= 1 DT=12.0 min | Area (ha)= 10.16 | Total Imp(%)= 66.00 | Dir. Conn.(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.71	3.45
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	107.44	63.42
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	2.546 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	79.19
TOTAL RAINFALL	(mm)=	95.96
RUNOFF COEFFICIENT	=	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0109):	10.16	2.546	12.00	79.19
	+ ID2= 2 (0083):	3.28	0.840	12.00	81.04
	ID = 3 (0107):	13.44	3.387	12.00	79.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0107):	13.44	3.387	12.00	79.64
	+ ID2= 2 (0089):	1.48	0.350	12.00	78.26
	ID = 1 (0107):	14.92	3.737	12.00	79.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.92	3.737	12.00	79.50
+ ID2= 2 (0090):	2.42	0.502	12.00	74.08
ID = 3 (0107):	17.34	4.239	12.00	78.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.34	4.239	12.00	78.75
+ ID2= 2 (0092):	1.26	0.309	12.00	80.12
ID = 1 (0107):	18.60	4.548	12.00	78.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7020	0.4508
0.0190	0.0711	1.0110	0.9482
0.0360	0.1863	1.0260	0.9798
0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.595	4.548	12.00	78.84
OUTFLOW: ID= 1 (0106)	18.595	0.875	12.30	78.79

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.24
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.7306

ROUTE PIPE (0105)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.60	0.87	12.30	78.79	0.39	2.23
OUTFLOW: ID= 1 (0105)	18.60	0.88	12.30	78.79	0.39	2.23

ADD HYD (0099)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.15	3.601	12.00	74.70
+ ID2= 2 (0105):	18.60	0.877	12.30	78.79
ID = 3 (0099):	33.75	4.375	12.00	77.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0144 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0099):	33.75	4.375	12.00	77.00
+ ID2= 2 (0144):	0.00	0.000	0.00	0.00
ID = 1 (0099):	33.75	4.375	12.00	77.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7390	1.4514
0.0190	0.0906	0.8290	1.8600
0.0770	0.2799	1.1240	1.9075
0.2960	0.3787	5.4930	2.2479
0.3520	0.4123	13.3920	2.4903

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0099)	33.747	4.375	12.00	77.00
OUTFLOW: ID= 1 (0098)	33.747	0.605	14.30	76.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.84
TIME SHIFT OF PEAK FLOW (min)=138.00
MAXIMUM STORAGE USED (ha.m.)= 1.0932

CALIB
NASHYD (0123) | ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.197 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 37.157
TOTAL RAINFALL (mm)= 95.961
RUNOFF COEFFICIENT = 0.387

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

CALIB
NASHYD (0124) | ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.276 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 44.289
TOTAL RAINFALL (mm)= 95.961
RUNOFF COEFFICIENT = 0.462

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

CALIB
STANDHYD (0086) | ID= 1 DT=12.0 min

Area (ha)= 10.18
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	7.63	2.55

Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		107.44	63.42	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	2.28	0.40	2.680 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	83.36
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.87

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0087) | Area (ha)= 2.21
ID= 1 DT=12.0 min | Total Imp(%)= 85.00 Dir. Conn.(%)= 85.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.33
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.56	0.05	0.613 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	88.00
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0097) | Area (ha)= 0.85
ID= 1 DT=12.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.07	0.10	0.168 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	61.56
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.64

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0125) | Area (ha)= 6.71
ID= 1 DT=12.0 min | Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.37	1.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		107.44	63.42
over (min)		12.00	12.00
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	1.60	0.21	1.814 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	85.68
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0123):	1.61	0.197	12.00	37.16
+ ID2= 2 (0124):	2.59	0.276	12.00	44.29
ID = 3 (0122):	4.20	0.473	12.00	41.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	4.20	0.473	12.00	41.55
+ ID2= 2 (0125):	6.71	1.814	12.00	85.68
ID = 1 (0122):	10.91	2.286	12.00	68.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	10.91	2.286	12.00	68.69
+ ID2= 2 (0086):	10.18	2.680	12.00	83.36
ID = 3 (0122):	21.09	4.967	12.00	75.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	21.09	4.967	12.00	75.78
+ ID2= 2 (0087):	2.21	0.613	12.00	88.00

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          ID = 1 (0122):    23.30   5.580    12.00    76.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0122) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0122):    23.30   5.580    12.00    76.94
        + ID2= 2 (0097):     0.85   0.168    12.00    61.56
          ================================================
          ID = 3 (0122):    24.15   5.747    12.00    76.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| NASHYD    (0131) |   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   0.760 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  43.221
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.450

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

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| CALIB            |
| STANDHYD  (0128) |   Area     (ha)=   2.34
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.29         1.05
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.38         0.17          0.550 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      94.96        48.57          74.08
     TOTAL RAINFALL   (mm)=      95.96        95.96          95.96
     RUNOFF COEFFICIENT   =       0.99         0.51           0.77

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0130) |   Area     (ha)=   0.97
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.62         0.35
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.19         0.06          0.240 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      94.96        48.57          78.26
     TOTAL RAINFALL   (mm)=      95.96        95.96          95.96
     RUNOFF COEFFICIENT   =       0.99         0.51           0.82

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0129) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0128):     2.34   0.550    12.00    74.08
        + ID2= 2 (0130):     0.97   0.240    12.00    78.26
          ================================================
          ID = 3 (0129):     3.31   0.791    12.00    75.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0129) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0129):     3.31   0.791    12.00    75.31
        + ID2= 2 (0131):     6.53   0.760    12.00    43.22
          ================================================
          ID = 1 (0129):     9.84   1.550    12.00    54.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB            |
| NASHYD    (0134) |   Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.111 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  42.025
     TOTAL RAINFALL   (mm)=  95.961
     RUNOFF COEFFICIENT   =   0.438

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

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-------------------
| CALIB            |
| STANDHYD  (0095) |   Area     (ha)=   2.95
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.74         2.21
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     107.44        63.42
               over (min)       12.00        12.00
     Storage Coeff.  (min)=       0.98 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.22         0.35          0.569 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      94.96        48.57          60.17
     TOTAL RAINFALL   (mm)=      95.96        95.96          95.96
     RUNOFF COEFFICIENT   =       0.99         0.51           0.63

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
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(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0133) ID= 1 DT=12.0 min	Area (ha)= 6.86 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		107.44	63.42	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.25	0.42	1.671 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	76.87
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0135) ID= 1 DT=12.0 min	Area (ha)= 3.87 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.36	1.51	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		107.44	63.42	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.98 (ii)	6.57 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.70	0.24	0.943 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	94.96	48.57	76.87
TOTAL RAINFALL	(mm)=	95.96	95.96	95.96
RUNOFF COEFFICIENT	=	0.99	0.51	0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0132) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0133):	6.86	1.671	12.00	76.87
+ ID2= 2 (0134):	0.91	0.111	12.00	42.03
ID = 3 (0132):	7.77	1.782	12.00	72.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0132):	7.77	1.782	12.00	72.79
+ ID2= 2 (0135):	3.87	0.943	12.00	76.87
ID = 1 (0132):	11.64	2.724	12.00	74.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	2.724	12.00	74.14
+ ID2= 2 (0095):	2.95	0.569	12.00	60.17
ID = 3 (0132):	14.59	3.294	12.00	71.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4563
	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	3.294	12.00	71.32
OUTFLOW: ID= 1 (0127)	14.590	0.619	12.30	71.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.80
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.4292

ROUTE PIPE (0119) IN= 2---> OUT= 1 DT= 5.0 min	PIPE Number = 1.00 Diameter (mm)=1650.00 Length (m)= 500.00 Slope (m/m)= 0.005 Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.62	12.30	71.30	0.35	1.90
OUTFLOW: ID= 1 (0119)	14.59	0.62	12.30	71.30	0.35	1.90

ADD HYD (0118) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.621	12.30	71.30

```
     + ID2= 2 (0129):     9.84   1.550    12.00    54.01
       ================================================
       ID = 3 (0118):    24.43   1.981    12.00    64.39

  NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| RESERVOIR (0126) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.6510     0.4564
                         0.1220     0.0863    |  0.8770     0.7894
                         0.3620     0.1603    |  0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
  INFLOW : ID= 2 (0118)     24.430     1.981     12.00      64.39
  OUTFLOW: ID= 1 (0126)     24.430     0.579     13.50      64.38

              PEAK   FLOW   REDUCTION [Qout/Qin](%)= 29.23
              TIME SHIFT OF PEAK FLOW         (min)= 90.00
              MAXIMUM  STORAGE   USED        (ha.m.)=  0.3827

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------------------
| ADD HYD   (0121) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (0122):    24.15   5.747    12.00    76.39
     + ID2= 2 (0126):    24.43   0.579    13.50    64.38
       ================================================
       ID = 3 (0121):    48.58   6.144    12.00    70.41

  NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| RESERVOIR (0120) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
------------------       (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.4220     0.9546
                         0.0430     0.1534    |  0.6790     1.3320
                         0.0850     0.4277    |  0.9700     1.6432
                         0.2830     0.6181    |  3.4180     1.8082
                         0.3470     0.6580    | 15.8020     2.2183

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
  INFLOW : ID= 2 (0121)     48.580     6.144     12.00      70.41
  OUTFLOW: ID= 1 (0120)     48.580     0.727     14.40      70.39

              PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.83
              TIME SHIFT OF PEAK FLOW         (min)=144.00
              MAXIMUM  STORAGE   USED        (ha.m.)=  1.3834

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  ****************************
  ** SIMULATION NUMBER:   5 **
  ****************************


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|    READ STORM    |    Filename: C:\Users\DMcBrayne\AppD
|                  |              ata\Local\Temp\
|                  |              64bb3598-a470-4a6a-a565-94bc9e57a3dd\0f46b514
| Ptotal=108.06 mm |    Comments: FIFTY YR SCS STORM 12 MIN TIME STEP 24 H
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	1.10	6.20	2.20	12.20	22.04	18.20	2.20
0.40	1.10	6.40	2.20	12.40	13.78	18.40	2.20
0.60	1.10	6.60	2.20	12.60	9.92	18.60	2.20
0.80	1.10	6.80	2.20	12.80	9.37	18.80	2.20
1.00	1.10	7.00	2.20	13.00	6.61	19.00	2.20
1.20	1.10	7.20	2.20	13.20	5.51	19.20	1.65
1.40	1.10	7.40	2.20	13.40	5.51	19.40	1.65
1.60	1.10	7.60	2.20	13.60	5.51	19.60	1.65
1.80	1.10	7.80	2.20	13.80	5.51	19.80	1.65
2.00	1.10	8.00	2.20	14.00	5.51	20.00	1.65
2.20	1.10	8.20	3.31	14.20	3.31	20.20	1.65
2.40	1.10	8.40	3.31	14.40	3.31	20.40	1.65
2.60	1.10	8.60	3.31	14.60	3.31	20.60	1.65
2.80	1.10	8.80	3.31	14.80	3.31	20.80	1.65
3.00	1.10	9.00	3.31	15.00	3.31	21.00	1.65
3.20	1.10	9.20	3.31	15.20	3.31	21.20	1.10
3.40	1.10	9.40	3.31	15.40	3.31	21.40	1.10
3.60	1.10	9.60	3.31	15.60	3.31	21.60	1.10
3.80	1.10	9.80	3.31	15.80	3.31	21.80	1.10
4.00	1.10	10.00	3.31	16.00	3.31	22.00	1.10
4.20	2.20	10.20	6.05	16.20	2.20	22.20	1.10
4.40	2.20	10.40	6.05	16.40	2.20	22.40	1.10
4.60	2.20	10.60	6.05	16.60	2.20	22.60	1.10
4.80	2.20	10.80	6.05	16.80	2.20	22.80	1.10
5.00	2.20	11.00	6.05	17.00	2.20	23.00	1.10
5.20	2.20	11.20	8.26	17.20	2.20	23.20	1.10
5.40	2.20	11.40	12.12	17.40	2.20	23.40	1.10
5.60	2.20	11.60	27.55	17.60	2.20	23.60	1.10
5.80	2.20	11.80	60.61	17.80	2.20	23.80	1.10
6.00	2.20	12.00	114.06	18.00	2.20	24.00	1.10

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------------------
| CALIB            |
| NASHYD    (0114) |   Area     (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
------------------   U.H. Tp(hrs)=   0.26

     Unit Hyd Qpeak  (cms)=    0.310

     PEAK FLOW       (cms)=    0.231 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   54.161
     TOTAL RAINFALL   (mm)= 108.064
     RUNOFF COEFFICIENT    =    0.501

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

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------------------
| CALIB            |
| STANDHYD  (0084) |   Area     (ha)=  10.64
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        7.45          3.19
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      114.06         71.61
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.96 (ii)     6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        2.36          0.58      2.938 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00       12.00
     RUNOFF VOLUME    (mm)=      107.06         57.99       92.34
     TOTAL RAINFALL   (mm)=      108.06        108.06      108.06
     RUNOFF COEFFICIENT   =        0.99          0.54        0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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------------------
| CALIB            |
| STANDHYD  (0085) |   Area     (ha)=   8.54
|ID= 1 DT=12.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        5.55          2.99
     Dep. Storage     (mm)=        1.00          1.50
     Average Slope     (%)=        2.00          2.00
     Length            (m)=       30.00         20.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      114.06         71.61
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        0.96 (ii)     6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
```

Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.76	0.54	2.301 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	89.89
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0108) | Area (ha)= 1.50
ID= 1 DT=12.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.30	0.10 0.402 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	107.06	58.00 89.40
TOTAL RAINFALL	(mm)=	108.06	108.06 108.06
RUNOFF COEFFICIENT	=	0.99	0.54 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.40	12.00	89.40
MAJOR SYS.(ID= 2):	0.04	0.05	12.00	89.40
MINOR SYS.(ID= 3):	1.46	0.35	12.00	89.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113) | Area (ha)= 1.21
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.21	0.10 0.310 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	107.06	57.99 84.98
TOTAL RAINFALL	(mm)=	108.06	108.06 108.06
RUNOFF COEFFICIENT	=	0.99	0.54 0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.31	12.00	84.98
MAJOR SYS.(ID= 2):	0.12	0.14	12.00	84.98
MINOR SYS.(ID= 3):	1.09	0.17	12.00	84.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115) | Area (ha)= 17.98
ID= 1 DT=12.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	3.47	1.27 4.746 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00 12.00
RUNOFF VOLUME	(mm)=	107.06	58.00 87.93
TOTAL RAINFALL	(mm)=	108.06	108.06 108.06
RUNOFF COEFFICIENT	=	0.99	0.54 0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.231	12.00	54.16
+ ID2= 2 (0115):	17.98	4.746	12.00	87.93
ID = 3 (0112):	20.09	4.977	12.00	84.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	20.09	4.977	12.00	84.38
+ ID2= 2 (0145):	0.12	0.141	12.00	84.98
ID = 1 (0112):	20.21	5.118	12.00	84.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0112):		20.21	5.118	12.00	84.38
+ ID2= 2 (0084):		10.64	2.938	12.00	92.34
ID = 3 (0112):		30.85	8.056	12.00	87.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0112):		30.85	8.056	12.00	87.13
+ ID2= 2 (0085):		8.54	2.301	12.00	89.89
ID = 1 (0112):		39.39	10.357	12.00	87.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0112):		39.39	10.357	12.00	87.73
+ ID2= 2 (0089):		0.04	0.052	12.00	89.40
ID = 3 (0112):		39.43	10.409	12.00	87.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0137) ID= 1 DT=12.0 min					
	Area	(ha)=	1.33	Curve Number	(CN)= 74.0
	Ia	(mm)=	5.00	# of Linear Res.	(N)= 3.00
	U.H. Tp	(hrs)=	0.13		

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW (cms)= 0.187 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 44.700
TOTAL RAINFALL (mm)= 108.064
RUNOFF COEFFICIENT = 0.414

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

CALIB STANDHYD (0096) ID= 1 DT=12.0 min					
	Area	(ha)=	3.62		
	Total Imp	(%)=	28.00	Dir. Conn.	(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	114.06	71.61
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.32	0.47	0.794 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	71.73
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.66

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0138) ID= 1 DT=12.0 min					
	Area	(ha)=	1.45		
	Total Imp	(%)=	64.00	Dir. Conn.	(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	114.06	71.61
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.29	0.09	0.389 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	57.99	89.40
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0137):		1.33	0.187	12.00	44.70
+ ID2= 2 (0138):		1.45	0.389	12.00	89.40
ID = 3 (0136):		2.78	0.575	12.00	68.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0136):		2.78	0.575	12.00	68.01
+ ID2= 2 (0096):		3.62	0.794	12.00	71.73
ID = 1 (0136):		6.40	1.369	12.00	70.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0117) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2	(0136)	6.400	1.369	12.00	70.12
OUTFLOW: ID= 1	(0117)	6.400	0.119	12.90	70.02

PEAK FLOW REDUCTION [Qout/Qin] (%)= 8.69
TIME SHIFT OF PEAK FLOW (min)= 54.00
MAXIMUM STORAGE USED (ha.m.)= 0.2418

ROUTE PIPE (0116) IN= 2---> OUT= 1 DT= 5.0 min		
	Pipe Number	= 1.00
	Diameter	(mm)=1650.00
	Length	(m)= 850.00
	Slope	(m/m)= 0.005
	Manning n	= 0.013

<-------------- TRAVEL TIME TABLE ------------------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

		<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.12	12.90	70.02	0.15	1.09
OUTFLOW: ID= 1 (0116)	6.40	0.12	13.00	70.02	0.15	1.08

ADD HYD (0111)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0112):	39.43	10.409	12.00	87.73
	+ ID2= 2 (0116):	6.40	0.118	13.00	70.02
	ID = 3 (0111):	45.83	10.452	12.00	85.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1	0.0000	0.0000	1.4644	1.1181
DT= 5.0 min	0.0392	0.1633	1.6231	1.3201
	0.0901	0.4190	2.0261	1.9685
	0.1513	0.6880	2.6873	2.1410
	0.4982	0.8751	6.1638	2.4992
	0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.831	10.452	12.00	85.28
OUTFLOW: ID= 1 (0110)	45.831	1.907	12.30	85.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.25
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 1.7806

DUHYD (0144)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
Inlet Cap.=2.026					
#of Inlets= 1					
Total(cms)= 2.0	TOTAL HYD.(ID= 1):	45.83	1.91	12.30	85.26
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	45.83	1.91	12.30	85.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0081)	Area (ha)= 1.34		
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.00	0.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.379 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	94.80
TOTAL RAINFALL	(mm)=	108.06
RUNOFF COEFFICIENT	=	0.88

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0082)	Area (ha)= 2.51		
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.710 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	94.80
TOTAL RAINFALL	(mm)=	108.06
RUNOFF COEFFICIENT	=	0.88

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0101)	Area (ha)= 0.47		
ID= 1 DT=12.0 min	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.130 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	92.33
TOTAL RAINFALL	(mm)=	108.06
RUNOFF COEFFICIENT	=	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

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          CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0088) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0101):     0.47   0.130    12.00    92.33
        + ID2= 2 (0082):     2.51   0.710    12.00    94.80
          ================================================
          ID = 3 (0088):     2.98   0.840    12.00    94.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| DUHYD     (0093) |
| Inlet Cap.=0.934 |
| #of Inlets=    1 |
| Total(cms)=  0.9 |       AREA     QPEAK     TPEAK     R.V.
--------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   2.98      0.84     12.00    94.41
     ======================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   2.98      0.84     12.00    94.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0094) |   Area    (ha)=   2.25
|ID= 1 DT=12.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.35         0.90
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.43         0.16         0.591 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     107.06        58.00         87.43
     TOTAL RAINFALL   (mm)=     108.06       108.06        108.06
     RUNOFF COEFFICIENT   =       0.99         0.54          0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0100) |   Area    (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
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                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.86         0.41
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.27         0.07         0.347 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     107.06        57.99         91.36
     TOTAL RAINFALL   (mm)=     108.06       108.06        108.06
     RUNOFF COEFFICIENT   =       0.99         0.54          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0092) |
| Inlet Cap.=0.309 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK     R.V.
--------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.27      0.35     12.00    91.36
     ======================================================
     MAJOR SYS.(ID= 2):   0.03      0.04     12.00    91.36
     MINOR SYS.(ID= 3):   1.24      0.31     12.00    91.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0102) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.21         0.37         0.583 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     107.06        58.00         70.26
     TOTAL RAINFALL   (mm)=     108.06       108.06        108.06
     RUNOFF COEFFICIENT   =       0.99         0.54          0.65

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0103) |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.06        71.61
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.04         0.47         1.507 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00         12.00
     RUNOFF VOLUME    (mm)=     107.06        58.00         85.47
     TOTAL RAINFALL   (mm)=     108.06       108.06        108.06
     RUNOFF COEFFICIENT   =       0.99         0.54          0.79

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0102):	2.71	0.583	12.00	70.26
	+ ID2= 2 (0103):	5.86	1.507	12.00	85.47
	ID = 3 (0104):	8.57	2.090	12.00	80.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0104):	8.57	2.090	12.00	80.66
	+ ID2= 2 (0081):	1.34	0.379	12.00	94.80
	ID = 1 (0104):	9.91	2.469	12.00	82.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	9.91	2.469	12.00	82.57
	+ ID2= 2 (0092):	0.03	0.038	12.00	91.36
	ID = 3 (0104):	9.94	2.508	12.00	82.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0104):	9.94	2.508	12.00	82.60
	+ ID2= 2 (0093):	2.98	0.840	12.00	94.41
	ID = 1 (0104):	12.92	3.348	12.00	85.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	12.92	3.348	12.00	85.32
	+ ID2= 2 (0094):	2.25	0.591	12.00	87.43
	ID = 3 (0104):	15.17	3.938	12.00	85.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0083) | Area (ha)= 3.28
ID= 1 DT=12.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.30	0.98
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.73	0.18	0.906 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	92.34
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0091) | Area (ha)= 2.50
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.44	0.20	0.640 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	107.06	58.00	84.98
TOTAL RAINFALL	(mm)=	108.06	108.06	108.06
RUNOFF COEFFICIENT	=	0.99	0.54	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)
Inlet Cap.=0.502
#of Inlets= 1
Total(cms)= 0.5

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.64	12.00	84.98
MAJOR SYS.(ID= 2):	0.12	0.14	12.00	84.98
MINOR SYS.(ID= 3):	2.38	0.50	12.00	84.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0109) | Area (ha)= 10.16
ID= 1 DT=12.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.71	3.45
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	2.12	0.63	2.751 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00

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     RUNOFF VOLUME     (mm)=     107.06        58.00          90.38
     TOTAL RAINFALL    (mm)=     108.06       108.06         108.06
     RUNOFF COEFFICIENT   =       0.99         0.54           0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0107) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0109):     10.16    2.751    12.00     90.38
       + ID2= 2 (0083):      3.28    0.906    12.00     92.34
         ================================================
         ID = 3 (0107):     13.44    3.657    12.00     90.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0107) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0107):     13.44    3.657    12.00     90.86
       + ID2= 2 (0089):      1.46    0.350    12.00     89.40
         ================================================
         ID = 1 (0107):     14.90    4.007    12.00     90.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0107) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0107):     14.90    4.007    12.00     90.72
       + ID2= 2 (0090):      2.38    0.502    12.00     84.98
         ================================================
         ID = 3 (0107):     17.28    4.509    12.00     89.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0107) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0107):     17.28    4.509    12.00     89.93
       + ID2= 2 (0092):      1.24    0.309    12.00     91.36
         ================================================
         ID = 1 (0107):     18.52    4.818    12.00     90.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0106) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |    (cms)     (ha.m.)
                        0.0000      0.0000     |   0.7020      0.4508
                        0.0190      0.0711     |   1.0110      0.9482
                        0.0360      0.1863     |   1.0260      0.9798
                        0.0460      0.2907     |   1.0950      1.1448
                        0.5590      0.4269     |   0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0107)     18.521     4.818     12.00      90.02
     OUTFLOW: ID= 1 (0106)     18.521     0.929     12.30      89.97

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.28
                   TIME SHIFT OF PEAK FLOW       (min)= 18.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.8162

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| ROUTE PIPE (0105)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 467.00
-------------------      Slope      (m/m)=  0.006
                         Manning n       =  0.013

     <----------------- TRAVEL TIME TABLE ---------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY    TRAV.TIME
         (m)     (cu.m.)       (cms)        (m/s)        min
        0.09    .201E+02        0.0         0.88         8.87
        0.17    .560E+02        0.2         1.37         5.68
        0.26    .101E+03        0.4         1.76         4.42
        0.35    .153E+03        0.7         2.09         3.72
        0.43    .210E+03        1.1         2.38         3.27
        0.52    .270E+03        1.5         2.64         2.95
        0.61    .334E+03        2.0         2.86         2.72
        0.69    .399E+03        2.6         3.06         2.55
        0.78    .466E+03        3.2         3.23         2.41
        0.87    .533E+03        3.9         3.38         2.31
        0.96    .599E+03        4.5         3.50         2.22
        1.04    .665E+03        5.1         3.60         2.16
        1.13    .728E+03        5.7         3.68         2.11
        1.22    .789E+03        6.3         3.74         2.08
        1.30    .846E+03        6.8         3.76         2.07
        1.39    .897E+03        7.2         3.76         2.07
        1.48    .943E+03        7.5         3.72         2.09
        1.56    .978E+03        7.6         3.63         2.15
        1.65    .999E+03        7.1         3.30         2.36
                                      <---- hydrograph ---->   <-pipe / channel->
                                AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                                 (ha)    (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0106)    18.52     0.93     12.30  89.97       0.40      2.27
     OUTFLOW: ID= 1 (0105)    18.52     0.93     12.30  89.97       0.40      2.27

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| ADD HYD   (0099) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0104):     15.17    3.938    12.00     85.64
       + ID2= 2 (0105):     18.52    0.930    12.30     89.97
         ================================================
         ID = 3 (0099):     33.69    4.743    12.00     88.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0099) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0144 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
         ID1= 3 (0099):     33.69    4.743    12.00     88.07
       + ID2= 2 (0144):      0.00    0.000     0.00      0.00
         ================================================
         ID = 1 (0099):     33.69    4.743    12.00     88.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0098) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)     |    (cms)     (ha.m.)
                        0.0000      0.0000     |   0.7390      1.4514
                        0.0190      0.0906     |   0.8290      1.8600
                        0.0770      0.2799     |   1.1240      1.9075
                        0.2960      0.3787     |   5.4930      2.2479
                        0.3520      0.4123     |  13.3920      2.4903

                              AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0099)     33.692     4.743     12.00      88.07
     OUTFLOW: ID= 1 (0098)     33.692     0.671     14.60      88.03

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.15
                   TIME SHIFT OF PEAK FLOW       (min)=156.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.2693
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| CALIB              |
| NASHYD    (0123)   |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.226 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  44.700
     TOTAL RAINFALL   (mm)= 108.064
     RUNOFF COEFFICIENT   =   0.414

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

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--------------------
| CALIB              |
| NASHYD    (0124)   |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min   |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.323 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  53.280
     TOTAL RAINFALL   (mm)= 108.064
     RUNOFF COEFFICIENT   =   0.493

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

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--------------------
| CALIB              |
| STANDHYD  (0086)   |   Area    (ha)=  10.18
|ID= 1 DT=12.0 min   |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        7.63         2.55
     Dep. Storage     (mm)=        1.00         1.50
     Average Slope     (%)=        2.00         2.00
     Length            (m)=       30.00        20.00
     Mannings n          =       0.013        0.250

     Max.Eff.Inten.(mm/hr)=      114.06        71.61
                over (min)       12.00        12.00
     Storage Coeff.  (min)=        0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00        12.00
     Unit Hyd. peak  (cms)=        0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        2.42         0.46          2.880 (iii)
     TIME TO PEAK    (hrs)=       12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      107.06        58.00          94.80
     TOTAL RAINFALL   (mm)=      108.06       108.06         108.06
     RUNOFF COEFFICIENT   =        0.99         0.54           0.88

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0087)   |   Area    (ha)=   2.21
|ID= 1 DT=12.0 min   |   Total Imp(%)=  85.00   Dir. Conn.(%)=  85.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.88         0.33
     Dep. Storage     (mm)=        1.00         1.50
     Average Slope     (%)=        2.00         2.00
     Length            (m)=       30.00        20.00
     Mannings n          =       0.013        0.250

     Max.Eff.Inten.(mm/hr)=      114.06        71.61
                over (min)       12.00        12.00
     Storage Coeff.  (min)=        0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00        12.00
     Unit Hyd. peak  (cms)=        0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.60         0.06          0.655 (iii)
     TIME TO PEAK    (hrs)=       12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      107.06        57.99          99.70
     TOTAL RAINFALL   (mm)=      108.06       108.06         108.06
     RUNOFF COEFFICIENT   =        0.99         0.54           0.92

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0097)   |   Area    (ha)=   0.85
|ID= 1 DT=12.0 min   |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.24         0.61
     Dep. Storage     (mm)=        1.00         1.50
     Average Slope     (%)=        2.00         2.00
     Length            (m)=       30.00        20.00
     Mannings n          =       0.013        0.250

     Max.Eff.Inten.(mm/hr)=      114.06        71.61
                over (min)       12.00        12.00
     Storage Coeff.  (min)=        0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00        12.00
     Unit Hyd. peak  (cms)=        0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.08         0.11          0.186 (iii)
     TIME TO PEAK    (hrs)=       12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      107.06        57.99          71.73
     TOTAL RAINFALL   (mm)=      108.06       108.06         108.06
     RUNOFF COEFFICIENT   =        0.99         0.54           0.66

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB              |
| STANDHYD  (0125)   |   Area    (ha)=   6.71
|ID= 1 DT=12.0 min   |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        5.37         1.34
     Dep. Storage     (mm)=        1.00         1.50
     Average Slope     (%)=        2.00         2.00
     Length            (m)=       30.00        20.00
     Mannings n          =       0.013        0.250

     Max.Eff.Inten.(mm/hr)=      114.06        71.61
                over (min)       12.00        12.00
     Storage Coeff.  (min)=        0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=       12.00        12.00
     Unit Hyd. peak  (cms)=        0.14         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        1.70         0.24          1.944 (iii)
     TIME TO PEAK    (hrs)=       12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      107.06        58.00          97.25
     TOTAL RAINFALL   (mm)=      108.06       108.06         108.06
     RUNOFF COEFFICIENT   =        0.99         0.54           0.90

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0122)   |
|   1 +  2 =  3      |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
```

ID1= 1 (0123):	1.61	0.226	12.00	44.70
+ ID2= 2 (0124):	2.59	0.323	12.00	53.28
ID = 3 (0122):	4.20	0.549	12.00	49.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	4.20	0.549	12.00	49.99
+ ID2= 2 (0125):	6.71	1.944	12.00	97.25
ID = 1 (0122):	10.91	2.493	12.00	79.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	10.91	2.493	12.00	79.06
+ ID2= 2 (0086):	10.18	2.880	12.00	94.80
ID = 3 (0122):	21.09	5.374	12.00	86.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	21.09	5.374	12.00	86.65
+ ID2= 2 (0087):	2.21	0.655	12.00	99.70
ID = 1 (0122):	23.30	6.029	12.00	87.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	23.30	6.029	12.00	87.89
+ ID2= 2 (0097):	0.85	0.186	12.00	71.73
ID = 3 (0122):	24.15	6.215	12.00	87.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0131) ID= 1 DT=12.0 min | Area (ha)= 6.53 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW	(cms)=	0.885 (i)
TIME TO PEAK	(hrs)=	12.000
RUNOFF VOLUME	(mm)=	51.995
TOTAL RAINFALL	(mm)=	108.064
RUNOFF COEFFICIENT	=	0.481

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

CALIB STANDHYD (0128) ID= 1 DT=12.0 min | Area (ha)= 2.34 | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.599 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	84.98
TOTAL RAINFALL	(mm)=	108.06
RUNOFF COEFFICIENT	=	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0130) ID= 1 DT=12.0 min | Area (ha)= 0.97 | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		114.06	71.61
over (min)		12.00	12.00
Storage Coeff. (min)=		0.96 (ii)	6.28 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.260 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	89.40
TOTAL RAINFALL	(mm)=	108.06
RUNOFF COEFFICIENT	=	0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0128):	2.34	0.599	12.00	84.98
+ ID2= 2 (0130):	0.97	0.260	12.00	89.40
ID = 3 (0129):	3.31	0.859	12.00	86.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0129):	3.31	0.859	12.00	86.28
+ ID2= 2 (0131):	6.53	0.885	12.00	52.00
ID = 1 (0129):	9.84	1.743	12.00	63.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0134) | Area (ha)= 0.91 Curve Number (CN)= 74.0

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|ID= 1 DT=12.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.128 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  50.557
     TOTAL RAINFALL   (mm)= 108.064
     RUNOFF COEFFICIENT   =   0.468

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

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-------------------
| CALIB             |
| STANDHYD  (0095)  |   Area    (ha)=   2.95
|ID= 1 DT=12.0 min  |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.74         2.21
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=    114.06        71.61
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.23         0.40          0.635 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=    107.06        58.00          70.26
     TOTAL RAINFALL   (mm)=    108.06       108.06         108.06
     RUNOFF COEFFICIENT   =      0.99         0.54           0.65

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0133)  |   Area    (ha)=   6.86
|ID= 1 DT=12.0 min  |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.18         2.68
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=    114.06        71.61
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      1.33         0.48          1.811 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=    107.06        58.00          87.93
     TOTAL RAINFALL   (mm)=    108.06       108.06         108.06
     RUNOFF COEFFICIENT   =      0.99         0.54           0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0135)  |   Area    (ha)=   3.87
|ID= 1 DT=12.0 min  |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      2.36         1.51
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=    114.06        71.61
               over (min)      12.00        12.00
     Storage Coeff.  (min)=     0.96 (ii)    6.28 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.75         0.27          1.022 (iii)
     TIME TO PEAK    (hrs)=     12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=    107.06        58.00          87.93
     TOTAL RAINFALL   (mm)=    108.06       108.06         108.06
     RUNOFF COEFFICIENT   =      0.99         0.54           0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0132)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0133):     6.86   1.811    12.00    87.93
       + ID2= 2 (0134):     0.91   0.128    12.00    50.56
         ==========================================
         ID = 3 (0132):     7.77   1.939    12.00    83.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0132)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0132):     7.77   1.939    12.00    83.55
       + ID2= 2 (0135):     3.87   1.022    12.00    87.93
         ==========================================
         ID = 1 (0132):    11.64   2.961    12.00    85.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0132)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0132):    11.64   2.961    12.00    85.00
       + ID2= 2 (0095):     2.95   0.635    12.00    70.26
         ==========================================
         ID = 3 (0132):    14.59   3.595    12.00    82.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0127)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------        (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  0.6510     0.4563
                         0.1220     0.1110     |  0.8770     0.7650
                         0.3620     0.2096     |  0.0000     0.0000

                              AREA     QPEAK     TPEAK        R.V.
                              (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (0132)    14.590     3.595     12.00       82.02
     OUTFLOW: ID= 1 (0127)    14.590     0.678     12.30       82.01

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 18.86
                TIME SHIFT OF PEAK FLOW          (min)= 18.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.4939

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| ROUTE PIPE (0119) | PIPE Number = 1.00
| IN= 2---> OUT= 1 | Diameter (mm)=1650.00
| DT= 5.0 min | Length (m)= 500.00
| | Slope (m/m)= 0.005
| | Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.68	12.30	82.01	0.36	1.95
OUTFLOW: ID= 1 (0119)	14.59	0.68	12.30	82.01	0.36	1.95

ADD HYD (0118)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0119):	14.59	0.679	12.30	82.01
	+ ID2= 2 (0129):	9.84	1.743	12.00	63.53
	ID = 3 (0118):	24.43	2.231	12.00	74.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1		0.0000	0.0000	0.6510	0.4564
DT= 5.0 min		0.1220	0.0863	0.8770	0.7894
		0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	2.231	12.00	74.62
OUTFLOW: ID= 1 (0126)	24.430	0.649	13.60	74.61

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.10
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4547

ADD HYD (0121)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0122):	24.15	6.215	12.00	87.32
	+ ID2= 2 (0126):	24.43	0.649	13.60	74.61
	ID = 3 (0121):	48.58	6.650	12.00	80.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1		0.0000	0.0000	0.4220	0.9546
DT= 5.0 min		0.0430	0.1534	0.6790	1.3320
		0.0850	0.4277	0.9700	1.6432
		0.2830	0.6181	3.4180	1.8082
		0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	6.650	12.00	80.99
OUTFLOW: ID= 1 (0120)	48.580	0.871	14.20	80.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.10
TIME SHIFT OF PEAK FLOW (min)=132.00
MAXIMUM STORAGE USED (ha.m.)= 1.5379

****
** SIMULATION NUMBER: 6 **
****

| READ STORM | Filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-94bc9e57a3dd\b46f0b66
| Ptotal=112.42 mm | Comments: SCS TYPE II TWENTY FOUR HOUR, HUNDRED YE

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.20	1.27	6.20	2.29	12.20	21.84	18.20	2.29
0.40	1.27	6.40	2.29	12.40	13.72	18.40	2.29
0.60	1.27	6.60	2.29	12.60	9.91	18.60	2.29
0.80	1.27	6.80	2.29	12.80	9.40	18.80	2.29
1.00	1.27	7.00	2.29	13.00	6.60	19.00	2.29
1.20	1.27	7.20	2.29	13.20	5.59	19.20	1.78
1.40	1.27	7.40	2.29	13.40	5.59	19.40	1.78
1.60	1.27	7.60	2.29	13.60	5.59	19.60	1.78
1.80	1.27	7.80	2.29	13.80	5.59	19.80	1.78
2.00	1.27	8.00	2.29	14.00	5.59	20.00	1.78
2.20	1.27	8.20	3.30	14.20	3.30	20.20	1.78
2.40	1.27	8.40	3.30	14.40	3.30	20.40	1.78
2.60	1.27	8.60	3.30	14.60	3.30	20.60	1.78
2.80	1.27	8.80	3.30	14.80	3.30	20.80	1.78
3.00	1.27	9.00	3.30	15.00	3.30	21.00	1.78
3.20	1.27	9.20	3.30	15.20	3.30	21.20	1.27
3.40	1.27	9.40	3.30	15.40	3.30	21.40	1.27
3.60	1.27	9.60	3.30	15.60	3.30	21.60	1.27
3.80	1.27	9.80	3.30	15.80	3.30	21.80	1.27
4.00	1.27	10.00	3.30	16.00	3.30	22.00	1.27
4.20	2.29	10.20	6.10	16.20	2.29	22.20	1.27
4.40	2.29	10.40	6.10	16.40	2.29	22.40	1.27
4.60	2.29	10.60	6.10	16.60	2.29	22.60	1.27
4.80	2.29	10.80	6.10	16.80	2.29	22.80	1.27
5.00	2.29	11.00	6.10	17.00	2.29	23.00	1.27
5.20	2.29	11.20	8.13	17.20	2.29	23.20	1.27
5.40	2.29	11.40	11.94	17.40	2.29	23.40	1.27
5.60	2.29	11.60	27.43	17.60	2.29	23.60	1.27
5.80	2.29	11.80	59.94	17.80	2.29	23.80	1.27
6.00	2.29	12.00	126.49	18.00	2.29	24.00	1.27

| CALIB NASHYD (0114) ID= 1 DT=12.0 min | Area (ha)= 2.11 Curve Number (CN)= 74.0
| | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.26

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.252 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 57.533
TOTAL RAINFALL (mm)= 112.420
RUNOFF COEFFICIENT = 0.512

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB STANDHYD (0084) ID= 1 DT=12.0 min | Area (ha)= 10.64
| | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	7.45	3.19

Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		126.49	80.66	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	2.62	0.65	3.270 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	96.43
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0085)
ID= 1 DT=12.0 min

Area (ha)= 8.54
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	5.55	2.99	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		126.49	80.66	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.95	0.61	2.562 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	93.94
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.84

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0108)
ID= 1 DT=12.0 min

Area (ha)= 1.50
Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		126.49	80.66	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.34	0.11	0.448 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	93.44
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.45	12.00	93.44
MAJOR SYS.(ID= 2):	0.08	0.10	12.00	93.44
MINOR SYS.(ID= 3):	1.42	0.35	12.00	93.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113)
ID= 1 DT=12.0 min

Area (ha)= 1.21
Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		126.49	80.66	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.23	0.11	0.345 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	88.94
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.79

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.35	12.00	88.94
MAJOR SYS.(ID= 2):	0.14	0.18	12.00	88.94
MINOR SYS.(ID= 3):	1.07	0.17	12.00	88.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115)
ID= 1 DT=12.0 min

Area (ha)= 17.98
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		126.49	80.66	
over (min)		12.00	12.00	
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	3.85	1.44	5.289 (iii)

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     TIME TO PEAK     (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      111.42        61.47          91.94
     TOTAL RAINFALL   (mm)=      112.42       112.42         112.42
     RUNOFF COEFFICIENT   =        0.99         0.55           0.82

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0114):     2.11   0.252    12.00    57.53
        + ID2= 2 (0115):    17.98   5.289    12.00    91.94
          ================================================
          ID = 3 (0112):    20.09   5.541    12.00    88.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0112) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0112):    20.09   5.541    12.00    88.32
        + ID2= 2 (0145):     0.14   0.176    12.00    88.94
          ================================================
          ID = 1 (0112):    20.23   5.718    12.00    88.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0112):    20.23   5.718    12.00    88.33
        + ID2= 2 (0084):    10.64   3.270    12.00    96.43
          ================================================
          ID = 3 (0112):    30.87   8.988    12.00    91.12

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0112) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0112):    30.87   8.988    12.00    91.12
        + ID2= 2 (0085):     8.54   2.562    12.00    93.94
          ================================================
          ID = 1 (0112):    39.41  11.550    12.00    91.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0112) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0112):    39.41  11.550    12.00    91.73
        + ID2= 2 (0089):     0.08   0.098    12.00    93.44
          ================================================
          ID = 3 (0112):    39.49  11.648    12.00    91.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0137) |   Area     (ha)=   1.33   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.209 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  47.484
     TOTAL RAINFALL   (mm)= 112.420
     RUNOFF COEFFICIENT   =   0.422

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0096) |   Area     (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=        1.01          2.61
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      126.49         80.66
               over (min)        12.00         12.00
     Storage Coeff.  (min)=        0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.36          0.53          0.890 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00         12.00
     RUNOFF VOLUME    (mm)=      111.42         61.47         75.45
     TOTAL RAINFALL   (mm)=      112.42        112.42        112.42
     RUNOFF COEFFICIENT   =        0.99          0.55          0.67

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0138) |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=        0.93          0.52
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      126.49         80.66
               over (min)        12.00         12.00
     Storage Coeff.  (min)=        0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.33          0.11          0.433 (iii)
     TIME TO PEAK    (hrs)=       12.00         12.00         12.00
     RUNOFF VOLUME    (mm)=      111.42         61.47         93.44
     TOTAL RAINFALL   (mm)=      112.42        112.42        112.42
     RUNOFF COEFFICIENT   =        0.99          0.55          0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0136) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0137):     1.33   0.209    12.00    47.48
        + ID2= 2 (0138):     1.45   0.433    12.00    93.44
          ================================================
          ID = 3 (0136):     2.78   0.642    12.00    71.45
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0136):	2.78	0.642	12.00	71.45
	+ ID2= 2 (0096):	3.62	0.890	12.00	75.45
	ID = 1 (0136):	6.40	1.531	12.00	73.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0117)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0136)	6.400	1.531	12.00	73.71
OUTFLOW: ID= 1 (0117)	6.400	0.127	12.80	73.62

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.30
TIME SHIFT OF PEAK FLOW (min)= 48.00
MAXIMUM STORAGE USED (ha.m.)= 0.2533

ROUTE PIPE (0116)		
IN= 2---> OUT= 1	Pipe Number	= 1.00
DT= 5.0 min	Diameter (mm)	=1650.00
	Length (m)	= 850.00
	Slope (m/m)	= 0.005
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

	<---- hydrograph ---->				<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.13	12.80	73.62	0.16	1.13
OUTFLOW: ID= 1 (0116)	6.40	0.13	12.90	73.62	0.16	1.12

ADD HYD (0111)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0112):	39.49	11.648	12.00	91.74
	+ ID2= 2 (0116):	6.40	0.127	12.90	73.62
	ID = 3 (0111):	45.89	11.693	12.00	89.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	1.4644	1.1181
	0.0392	0.1633	1.6231	1.3201
	0.0901	0.4190	2.0261	1.9685
	0.1513	0.6880	2.6873	2.1410
	0.4982	0.8751	6.1638	2.4992
	0.6461	0.9229	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0111)	45.888	11.693	12.00	89.24
OUTFLOW: ID= 1 (0110)	45.888	1.968	12.30	89.21

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.83
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 1.8768

DUHYD (0144)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=2.026		(ha)	(cms)	(hrs)	(mm)
#of Inlets= 1					
Total(cms)= 2.0	TOTAL HYD.(ID= 1):	45.89	1.97	12.30	89.21
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	45.89	1.97	12.30	89.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0081)	Area (ha)= 1.34			
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00		
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	1.00	0.34	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	126.49	80.66	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.12	
				TOTALS
	PEAK FLOW (cms)=	0.35	0.07	0.422 (iii)
	TIME TO PEAK (hrs)=	12.00	12.00	12.00
	RUNOFF VOLUME (mm)=	111.42	61.47	98.93
	TOTAL RAINFALL (mm)=	112.42	112.42	112.42
	RUNOFF COEFFICIENT =	0.99	0.55	0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0082)	Area (ha)= 2.51			
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00		
		IMPERVIOUS	PERVIOUS (i)	
	Surface Area (ha)=	1.88	0.63	
	Dep. Storage (mm)=	1.00	1.50	
	Average Slope (%)=	2.00	2.00	
	Length (m)=	30.00	20.00	
	Mannings n =	0.013	0.250	
	Max.Eff.Inten.(mm/hr)=	126.49	80.66	
	over (min)	12.00	12.00	
	Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)	
	Unit Hyd. Tpeak (min)=	12.00	12.00	
	Unit Hyd. peak (cms)=	0.14	0.12	
				TOTALS

PEAK FLOW	(cms)=	0.66	0.13	0.790 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	98.93
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0101) | Area (ha)= 0.47
ID= 1 DT=12.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.12	0.03	0.144 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	96.42
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	0.47	0.144	12.00	96.42
+ ID2= 2 (0082):	2.51	0.790	12.00	98.93
ID = 3 (0088):	2.98	0.934	12.00	98.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)
Inlet Cap.=0.934
#of Inlets= 1
Total(cms)= 0.9

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.93	12.00	98.54
MAJOR SYS.(ID= 2):	0.00	0.00	12.00	98.54
MINOR SYS.(ID= 3):	2.98	0.93	12.00	98.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0094) | Area (ha)= 2.25
ID= 1 DT=12.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.90
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.47	0.18	0.659 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	91.44
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0100) | Area (ha)= 1.27
ID= 1 DT=12.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.30	0.08	0.387 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	95.43
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0092)
Inlet Cap.=0.309
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.27	0.39	12.00	95.43
MAJOR SYS.(ID= 2):	0.06	0.08	12.00	95.43
MINOR SYS.(ID= 3):	1.21	0.31	12.00	95.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0102) | Area (ha)= 2.71
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.68	2.03
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.24	0.42	0.654 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	73.95
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0103) | Area (ha)= 5.86
ID= 1 DT=12.0 min | Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.28	2.58
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	1.15	0.53	1.681 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	89.44
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.80

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0102):	2.71	0.654	12.00	73.95
+ ID2= 2 (0103):	5.86	1.681	12.00	89.44
ID = 3 (0104):	8.57	2.335	12.00	84.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0104):	8.57	2.335	12.00	84.54
+ ID2= 2 (0081):	1.34	0.422	12.00	98.93
ID = 1 (0104):	9.91	2.757	12.00	86.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	9.91	2.757	12.00	86.49
+ ID2= 2 (0092):	0.06	0.078	12.00	95.43
ID = 3 (0104):	9.97	2.834	12.00	86.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0104):	9.97	2.834	12.00	86.54
+ ID2= 2 (0093):	2.98	0.934	12.00	98.54
ID = 1 (0104):	12.95	3.768	12.00	89.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	12.95	3.768	12.00	89.30
+ ID2= 2 (0094):	2.25	0.659	12.00	91.44
ID = 3 (0104):	15.20	4.427	12.00	89.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0083) | Area (ha)= 3.28
ID= 1 DT=12.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.30	0.98
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.81	0.20	1.008 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	96.43
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0091) | Area (ha)= 2.50
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	126.49	80.66
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

				TOTALS
PEAK FLOW	(cms)=	0.48	0.23	0.713 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	111.42	61.47	88.94
TOTAL RAINFALL	(mm)=	112.42	112.42	112.42
RUNOFF COEFFICIENT	=	0.99	0.55	0.79

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)				
Inlet Cap.=0.502				
#of Inlets= 1				
Total(cms)= 0.5	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.50	0.71	12.00	88.94
MAJOR SYS.(ID= 2):	0.17	0.21	12.00	88.94
MINOR SYS.(ID= 3):	2.33	0.50	12.00	88.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0109)	Area (ha)= 10.16			
ID= 1 DT=12.0 min	Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00		
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	6.71	3.45		
Dep. Storage (mm)=	1.00	1.50		
Average Slope (%)=	2.00	2.00		
Length (m)=	30.00	20.00		
Mannings n =	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	126.49	80.66		
over (min)	12.00	12.00		
Storage Coeff. (min)=	0.92 (ii)	5.99 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.12		
			TOTALS	
PEAK FLOW (cms)=	2.36	0.71	3.063 (iii)	
TIME TO PEAK (hrs)=	12.00	12.00	12.00	
RUNOFF VOLUME (mm)=	111.42	61.47	94.44	
TOTAL RAINFALL (mm)=	112.42	112.42	112.42	
RUNOFF COEFFICIENT =	0.99	0.55	0.84	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0109):	10.16	3.063	12.00	94.44
+ ID2= 2 (0083):	3.28	1.008	12.00	96.43
ID = 3 (0107):	13.44	4.071	12.00	94.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	13.44	4.071	12.00	94.92
+ ID2= 2 (0089):	1.42	0.350	12.00	93.44
ID = 1 (0107):	14.86	4.421	12.00	94.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.86	4.421	12.00	94.78
+ ID2= 2 (0090):	2.33	0.502	12.00	88.94
ID = 3 (0107):	17.19	4.923	12.00	93.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.19	4.923	12.00	93.99
+ ID2= 2 (0092):	1.21	0.309	12.00	95.43
ID = 1 (0107):	18.40	5.232	12.00	94.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.7020	0.4508
	0.0190	0.0711	1.0110	0.9482
	0.0360	0.1863	1.0260	0.9798
	0.0460	0.2907	1.0950	1.1448
	0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.405	5.232	12.00	94.08
OUTFLOW: ID= 1 (0106)	18.405	0.948	12.30	94.03

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.13
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.8481

ROUTE PIPE (0105)		
IN= 2---> OUT= 1	PIPE Number =	1.00
DT= 5.0 min	Diameter (mm)=	1650.00
	Length (m)=	467.00
	Slope (m/m)=	0.006
	Manning n =	0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.40	0.95	12.30	94.03	0.41	2.28
OUTFLOW: ID= 1 (0105)	18.40	0.95	12.30	94.03	0.41	2.28

ADD HYD (0099)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.20	4.427	12.00	89.62
+ ID2= 2 (0105):	18.40	0.951	12.30	94.03

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          ================================================
          ID = 3 (0099):    33.60   5.239    12.00    92.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0099) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0144 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0099):    33.60   5.239    12.00    92.09
        + ID2= 2 (0144):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0099):    33.60   5.239    12.00    92.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR (0098) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |      OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------       (cms)     (ha.m.)    |   (cms)     (ha.m.)
                           0.0000     0.0000    |  0.7390      1.4514
                           0.0190     0.0906    |  0.8290      1.8600
                           0.0770     0.2799    |  1.1240      1.9075
                           0.2960     0.3787    |  5.4930      2.2479
                           0.3520     0.4123    | 13.3920      2.4903

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0099)     33.603     5.239     12.00      92.09
     OUTFLOW: ID= 1 (0098)     33.603     0.690     14.70      92.05

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.18
                   TIME SHIFT OF PEAK FLOW       (min)=162.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.3209

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| CALIB            |
| NASHYD    (0123) |   Area     (ha)=   1.61   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.253 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  47.484
     TOTAL RAINFALL   (mm)= 112.420
     RUNOFF COEFFICIENT   =   0.422

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (0124) |   Area     (ha)=   2.59   Curve Number   (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.355 (i)
     TIME TO PEAK    (hrs)=  12.000
     RUNOFF VOLUME    (mm)=  56.597
     TOTAL RAINFALL   (mm)= 112.420
     RUNOFF COEFFICIENT   =   0.503

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0086) |   Area     (ha)=  10.18
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      7.63          2.55
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=    126.49         80.66
               over (min)       12.00         12.00
     Storage Coeff.  (min)=     0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=     2.68          0.52          3.204 (iii)
     TIME TO PEAK    (hrs)=    12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=   111.42         61.47          98.93
     TOTAL RAINFALL   (mm)=   112.42        112.42         112.42
     RUNOFF COEFFICIENT   =     0.99          0.55           0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0087) |   Area     (ha)=   2.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  85.00   Dir. Conn.(%)=  85.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.88          0.33
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=    126.49         80.66
               over (min)       12.00         12.00
     Storage Coeff.  (min)=     0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=     0.66          0.07          0.728 (iii)
     TIME TO PEAK    (hrs)=    12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=   111.42         61.47         103.93
     TOTAL RAINFALL   (mm)=   112.42        112.42         112.42
     RUNOFF COEFFICIENT   =     0.99          0.55           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0097) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.24          0.61
     Dep. Storage     (mm)=      1.00          1.50
     Average Slope     (%)=      2.00          2.00
     Length            (m)=     30.00         20.00
     Mannings n            =     0.013         0.250

     Max.Eff.Inten.(mm/hr)=    126.49         80.66
               over (min)       12.00         12.00
     Storage Coeff.  (min)=     0.92 (ii)     5.99 (ii)
     Unit Hyd. Tpeak (min)=     12.00         12.00
     Unit Hyd. peak  (cms)=     0.14          0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=     0.08          0.13          0.209 (iii)
     TIME TO PEAK    (hrs)=    12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=   111.42         61.47          75.45
     TOTAL RAINFALL   (mm)=   112.42        112.42         112.42
     RUNOFF COEFFICIENT   =     0.99          0.55           0.67

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
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THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
STANDHYD (0125)	Area (ha)= 6.71				
ID= 1 DT=12.0 min	Total Imp(%)= 80.00	Dir. Conn.(%)= 80.00			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.37	1.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.89 0.27 2.161 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.42 61.47 101.43
TOTAL RAINFALL	(mm)=	112.42 112.42 112.42
RUNOFF COEFFICIENT	=	0.99 0.55 0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0122)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0123):	1.61	0.253	12.00	47.48	
+ ID2= 2 (0124):	2.59	0.355	12.00	56.60	
ID = 3 (0122):	4.20	0.608	12.00	53.10	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0122):	4.20	0.608	12.00	53.10	
+ ID2= 2 (0125):	6.71	2.161	12.00	101.43	
ID = 1 (0122):	10.91	2.769	12.00	82.83	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0122):	10.91	2.769	12.00	82.83	
+ ID2= 2 (0086):	10.18	3.204	12.00	98.93	
ID = 3 (0122):	21.09	5.972	12.00	90.60	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0122):	21.09	5.972	12.00	90.60	
+ ID2= 2 (0087):	2.21	0.728	12.00	103.93	
ID = 1 (0122):	23.30	6.700	12.00	91.86	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0122):	23.30	6.700	12.00	91.86	
+ ID2= 2 (0097):	0.85	0.209	12.00	75.45	
ID = 3 (0122):	24.15	6.909	12.00	91.29	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0131)	Area (ha)= 6.53	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.19				

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.977 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 55.233
TOTAL RAINFALL (mm)= 112.420
RUNOFF COEFFICIENT = 0.491

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
STANDHYD (0128)	Area (ha)= 2.34				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.45 0.22 0.668 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00
RUNOFF VOLUME	(mm)=	111.42 61.47 88.94
TOTAL RAINFALL	(mm)=	112.42 112.42 112.42
RUNOFF COEFFICIENT	=	0.99 0.55 0.79

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0130)	Area (ha)= 0.97				
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		126.49	80.66
over (min)		12.00	12.00
Storage Coeff. (min)=		0.92 (ii)	5.99 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.22 0.07 0.290 (iii)
TIME TO PEAK	(hrs)=	12.00 12.00 12.00

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     RUNOFF VOLUME     (mm)=     111.42        61.47          93.44
     TOTAL RAINFALL    (mm)=     112.42       112.42         112.42
     RUNOFF COEFFICIENT    =       0.99         0.55           0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0129) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0128):     2.34   0.668    12.00    88.94
       + ID2= 2 (0130):     0.97   0.290    12.00    93.44
         ================================================
         ID = 3 (0129):     3.31   0.957    12.00    90.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0129) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 3 (0129):     3.31   0.957    12.00    90.26
       + ID2= 2 (0131):     6.53   0.977    12.00    55.23
         ================================================
         ID = 1 (0129):     9.84   1.935    12.00    67.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB            |
| NASHYD    (0134) |   Area     (ha)=   0.91   Curve Number  (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=    0.204

     PEAK FLOW       (cms)=    0.142 (i)
     TIME TO PEAK    (hrs)=   12.000
     RUNOFF VOLUME    (mm)=   53.705
     TOTAL RAINFALL   (mm)=  112.420
     RUNOFF COEFFICIENT    =   0.478

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0095) |   Area     (ha)=   2.95
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.74         2.21
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     126.49        80.66
                  over (min)      12.00        12.00
     Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.26         0.45          0.712 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00           12.00
     RUNOFF VOLUME    (mm)=     111.42        61.47           73.95
     TOTAL RAINFALL   (mm)=     112.42       112.42          112.42
     RUNOFF COEFFICIENT    =      0.99         0.55            0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0133) |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.18         2.68
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     126.49        80.66
                  over (min)      12.00        12.00
     Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.47         0.55          2.018 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00           12.00
     RUNOFF VOLUME    (mm)=     111.42        61.47           91.94
     TOTAL RAINFALL   (mm)=     112.42       112.42          112.42
     RUNOFF COEFFICIENT    =      0.99         0.55            0.82

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0135) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36         1.51
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     126.49        80.66
                  over (min)      12.00        12.00
     Storage Coeff.  (min)=       0.92 (ii)    5.99 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.83         0.31          1.138 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00           12.00
     RUNOFF VOLUME    (mm)=     111.42        61.47           91.94
     TOTAL RAINFALL   (mm)=     112.42       112.42          112.42
     RUNOFF COEFFICIENT    =      0.99         0.55            0.82

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0132) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)     (cms)    (hrs)      (mm)
         ID1= 1 (0133):     6.86   2.018    12.00    91.94
       + ID2= 2 (0134):     0.91   0.142    12.00    53.70
         ================================================
         ID = 3 (0132):     7.77   2.160    12.00    87.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0132) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
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	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0132):	7.77	2.160	12.00	87.46
+ ID2= 2 (0135):	3.87	1.138	12.00	91.94
ID = 1 (0132):	11.64	3.299	12.00	88.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	3.299	12.00	88.95
+ ID2= 2 (0095):	2.95	0.712	12.00	73.95
ID = 3 (0132):	14.59	4.011	12.00	85.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	4.011	12.00	85.92
OUTFLOW: ID= 1 (0127)	14.590	0.699	12.30	85.90

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.43
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.5224

ROUTE PIPE (0119) | IN= 2---> OUT= 1 | DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 500.00
Slope (m/m)= 0.005
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.70	12.30	85.90	0.37	1.96
OUTFLOW: ID= 1 (0119)	14.59	0.70	12.30	85.90	0.37	1.96

ADD HYD (0118) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.699	12.30	85.90
+ ID2= 2 (0129):	9.84	1.935	12.00	67.01
ID = 3 (0118):	24.43	2.434	12.00	78.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	2.434	12.00	78.35
OUTFLOW: ID= 1 (0126)	24.430	0.666	13.60	78.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.36
TIME SHIFT OF PEAK FLOW (min)= 96.00
MAXIMUM STORAGE USED (ha.m.)= 0.4785

ADD HYD (0121) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	24.15	6.909	12.00	91.29
+ ID2= 2 (0126):	24.43	0.666	13.60	78.35
ID = 3 (0121):	48.58	7.352	12.00	84.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120) | IN= 2---> OUT= 1 | DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	7.352	12.00	84.84
OUTFLOW: ID= 1 (0120)	48.580	0.914	14.10	84.82

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.43
TIME SHIFT OF PEAK FLOW (min)=126.00
MAXIMUM STORAGE USED (ha.m.)= 1.5833

****
** SIMULATION NUMBER: 7 **
****

CHICAGO STORM | Ptotal= 78.03 mm

IDF curve parameters: A=1770.000
B= 4.000
C= 0.820
used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	4.34	1.17	38.21	2.17	10.60	3.17	5.19
0.33	5.00	1.33	203.31	2.33	8.96	3.33	4.81
0.50	5.92	1.50	50.96	2.50	7.78	3.50	4.48
0.67	7.33	1.67	25.51	2.67	6.90	3.67	4.20
0.83	9.77	1.83	17.18	2.83	6.21	3.83	3.96
1.00	15.10	2.00	13.06	3.00	5.65	4.00	3.74

MODIFY STORM | CASE= 1

MODIFYING PARAMETERS
Multiplication Factor= 0.32

```
--------------------    Time shift  (min)     =  0.00

                TIME    RAIN  |  TIME    RAIN  |'  TIME    RAIN  |  TIME    RAIN
                 hrs   mm/hr  |   hrs   mm/hr  |'   hrs   mm/hr  |   hrs   mm/hr
               0.167    1.39  | 1.167   12.23  | 2.167    3.39  |  3.17    1.66
               0.333    1.60  | 1.333   65.06  | 2.333    2.87  |  3.33    1.54
               0.500    1.89  | 1.500   16.31  | 2.500    2.49  |  3.50    1.44
               0.667    2.35  | 1.667    8.16  | 2.667    2.21  |  3.67    1.35
               0.833    3.12  | 1.833    5.50  | 2.833    1.99  |  3.83    1.27
               1.000    4.83  | 2.000    4.18  | 3.000    1.81  |  4.00    1.20

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD    (0114) |   Area     (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.26

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN  |  TIME    RAIN  |'  TIME    RAIN  |  TIME    RAIN
                 hrs   mm/hr  |   hrs   mm/hr  |'   hrs   mm/hr  |   hrs   mm/hr
               0.200    1.42  | 1.200   21.03  | 2.200    3.30  |  3.20    1.64
               0.400    1.70  | 1.400   48.81  | 2.400    2.74  |  3.40    1.50
               0.600    2.12  | 1.600   12.24  | 2.600    2.35  |  3.60    1.39
               0.800    2.87  | 1.800    6.39  | 2.800    2.06  |  3.80    1.29
               1.000    4.55  | 2.000    4.40  | 3.000    1.84  |  4.00    1.21

     Unit Hyd Qpeak  (cms)=   0.310

     PEAK FLOW       (cms)=   0.019 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   3.580
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.143

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0084) |   Area     (ha)=  10.64
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.45          3.19
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.01          0.04      1.033 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60      1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89     18.24
     TOTAL RAINFALL   (mm)=      24.97         24.97     24.97
     RUNOFF COEFFICIENT   =       0.96          0.20      0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0085) |   Area     (ha)=   8.54
|ID= 1 DT=12.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.55          2.99
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.75          0.04      0.774 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60      1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89     17.29
     TOTAL RAINFALL   (mm)=      24.97         24.97     24.97
     RUNOFF COEFFICIENT   =       0.96          0.20      0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0108) |   Area     (ha)=   1.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.96          0.54
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.13          0.01      0.134 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60      1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89     17.09
     TOTAL RAINFALL   (mm)=      24.97         24.97     24.97
     RUNOFF COEFFICIENT   =       0.96          0.20      0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (0089) |
| Inlet Cap.=0.350 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.50      0.13      1.40   17.09
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.50      0.13      1.40   17.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0113) |   Area     (ha)=   1.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.67          0.54
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
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```
     PEAK FLOW       (cms)=       0.09         0.01          0.094 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60           1.40
     RUNOFF VOLUME    (mm)=      23.97         4.89          15.38
     TOTAL RAINFALL   (mm)=      24.97        24.97          24.97
     RUNOFF COEFFICIENT   =       0.96         0.20           0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (0145) |
| Inlet Cap.=0.169 |
| #of Inlets=    1 |
| Total(cms)=  0.2 |       AREA     QPEAK     TPEAK    R.V.
-------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.21      0.09      1.40   15.38
     ==========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.21      0.09      1.40   15.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD  (0115)  |   Area    (ha)=  17.98
|ID= 1 DT=12.0 min  |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.97          7.01
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.49          0.10          1.538 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60           1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89          16.53
     TOTAL RAINFALL   (mm)=      24.97         24.97          24.97
     RUNOFF COEFFICIENT   =       0.96          0.20           0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0114):     2.11   0.019     1.60     3.58
        + ID2= 2 (0115):    17.98   1.538     1.40    16.53
          ================================================
          ID = 3 (0112):    20.09   1.553     1.40    15.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0112) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0145 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
*** W A R N I N G :  HYDROGRAPH 0001 = HYDROGRAPH 0003
          ID1= 3 (0112):    20.09   1.553     1.40    15.17
        + ID2= 2 (0145):     0.00   0.000     0.00     0.00
          ================================================
          ID = 1 (0112):    20.09   1.553     1.40    15.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0112):    20.09   1.553     1.40    15.17
        + ID2= 2 (0084):    10.64   1.033     1.40    18.24
          ================================================
          ID = 3 (0112):    30.73   2.585     1.40    16.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0112) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0112):    30.73   2.585     1.40    16.23
        + ID2= 2 (0085):     8.54   0.774     1.40    17.29
          ================================================
          ID = 1 (0112):    39.27   3.359     1.40    16.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0089 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0112):    39.27   3.359     1.40    16.46
        + ID2= 2 (0089):     0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0112):    39.27   3.359     1.40    16.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD    (0137)  |   Area     (ha)=   1.33   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.016 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   2.955
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.118

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB             |
| STANDHYD  (0096)  |   Area    (ha)=   3.62
|ID= 1 DT=12.0 min  |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.01          2.61
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.14          0.04          0.156 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60           1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89          10.23
     TOTAL RAINFALL   (mm)=      24.97         24.97          24.97
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     RUNOFF COEFFICIENT   =       0.96         0.20          0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB
| STANDHYD  (0138)  |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.93         0.52
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      48.81         6.41
               over (min)        12.00        24.00
     Storage Coeff.  (min)=       1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00        24.00
     Unit Hyd. peak  (cms)=       0.14         0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.01          0.130 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60          1.40
     RUNOFF VOLUME    (mm)=      23.97         4.89         17.09
     TOTAL RAINFALL   (mm)=      24.97        24.97         24.97
     RUNOFF COEFFICIENT   =       0.96         0.20          0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0136)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0137):      1.33   0.016     1.40     2.95
       + ID2= 2 (0138):      1.45   0.130     1.40    17.09
         ================================================
         ID = 3 (0136):      2.78   0.146     1.40    10.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0136)  |
|   3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0136):      2.78   0.146     1.40    10.33
       + ID2= 2 (0096):      3.62   0.156     1.40    10.23
         ================================================
         ID = 1 (0136):      6.40   0.302     1.40    10.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0117)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   0.3260     0.8017
                          0.0790     0.1850    |   0.3960     0.9004
                          0.2270     0.3947    |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0136)     6.400     0.302      1.40      10.27
     OUTFLOW: ID= 1 (0117)     6.400     0.021      2.80      10.18

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.83
                TIME SHIFT OF PEAK FLOW         (min)= 84.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0483

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-------------------
| ROUTE PIPE (0116) |     PIPE Number      =   1.00
| IN= 2---> OUT= 1  |     Diameter    (mm)=1650.00
| DT=  5.0 min      |     Length       (m)= 850.00
-------------------       Slope      (m/m)=  0.005
                          Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ---------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY     TRAV.TIME
         (m)     (cu.m.)       (cms)         (m/s)          min
        0.09    .367E+02          0.0          0.80        17.68
        0.17    .102E+03          0.1          1.25        11.33
        0.26    .184E+03          0.3          1.61         8.81
        0.35    .278E+03          0.6          1.91         7.41
        0.43    .382E+03          1.0          2.18         6.51
        0.52    .492E+03          1.4          2.41         5.88
        0.61    .608E+03          1.9          2.61         5.43
        0.69    .727E+03          2.4          2.79         5.08
        0.78    .848E+03          2.9          2.95         4.81
        0.87    .970E+03          3.5          3.08         4.60
        0.96    .109E+04          4.1          3.20         4.43
        1.04    .121E+04          4.7          3.29         4.31
        1.13    .133E+04          5.2          3.36         4.22
        1.22    .144E+04          5.8          3.41         4.15
        1.30    .154E+04          6.2          3.44         4.12
        1.39    .163E+04          6.6          3.43         4.13
        1.48    .172E+04          6.9          3.40         4.17
        1.56    .178E+04          6.9          3.31         4.28
        1.65    .182E+04          6.5          3.02         4.70
                                          <---- hydrograph ---->   <-pipe / channel->
                                  AREA     QPEAK    TPEAK    R.V.   MAX DEPTH  MAX VEL
                                  (ha)     (cms)    (hrs)    (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0117)        6.40      0.02     2.80   10.18      0.05       0.80
     OUTFLOW: ID= 1 (0116)        6.40      0.02     3.30   10.18      0.05       0.80

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-------------------
| ADD HYD   (0111)  |
|   1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
-------------------            (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0112):     39.27   3.359     1.40     16.46
       + ID2= 2 (0116):      6.40   0.020     3.30     10.18
         ================================================
         ID = 3 (0111):     45.67   3.363     1.40     15.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR (0110)  |
| IN= 2---> OUT= 1  |
| DT=  5.0 min      |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |    (cms)     (ha.m.)
                          0.0000     0.0000    |   1.4644     1.1181
                          0.0392     0.1633    |   1.6231     1.3201
                          0.0901     0.4190    |   2.0261     1.9685
                          0.1513     0.6880    |   2.6873     2.1410
                          0.4982     0.8751    |   6.1638     2.4992
                          0.6461     0.9229    |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0111)    45.670     3.363      1.40      15.58
     OUTFLOW: ID= 1 (0110)    45.670     0.120      4.00      15.56

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.57
                TIME SHIFT OF PEAK FLOW         (min)=156.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.5500

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-------------------
| DUHYD     (0144)  |
| Inlet Cap.=2.026  |
| #of Inlets=   1   |
| Total(cms)=  2.0  |          AREA     QPEAK     TPEAK     R.V.
-------------------            (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):     45.67      0.12      4.00     15.56
     ================================================================
     MAJOR SYS.(ID= 2):      0.00      0.00      0.00      0.00
     MINOR SYS.(ID= 3):     45.67      0.12      4.00     15.56
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0081)	Area (ha)= 1.34		
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.00	0.34	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.14	0.00	0.139 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	19.19
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0082)	Area (ha)= 2.51		
ID= 1 DT=12.0 min	Total Imp(%)= 75.00	Dir. Conn.(%)= 75.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.88	0.63	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.26	0.01	0.260 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	19.19
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0101)	Area (ha)= 0.47		
ID= 1 DT=12.0 min	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	48.81	6.41
over	(min)	12.00	24.00
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak	(min)=	12.00	24.00
Unit Hyd. peak	(cms)=	0.14	0.06
PEAK FLOW	(cms)=	0.04	0.00	*TOTALS* 0.046 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	18.23
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0101):	0.47	0.046	1.40	18.23	
+ ID2= 2 (0082):	2.51	0.260	1.40	19.19	
ID = 3 (0088):	2.98	0.305	1.40	19.04	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)				
Inlet Cap.=0.934				
#of Inlets= 1				
Total(cms)= 0.9	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	2.98	0.31	1.40	19.04
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	2.98	0.31	1.40	19.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0094)	Area (ha)= 2.25		
ID= 1 DT=12.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 60.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.35	0.90	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.18	0.01	0.190 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	16.33
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.65

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0100)	Area (ha)= 1.27		
ID= 1 DT=12.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.86	0.41
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00

```
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      48.81         6.41
               over (min)        12.00        24.00
     Storage Coeff.  (min)=       1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00        24.00
     Unit Hyd. peak  (cms)=       0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.12         0.01      0.120 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=      23.97         4.89      17.85
     TOTAL RAINFALL   (mm)=      24.97        24.97      24.97
     RUNOFF COEFFICIENT   =       0.96         0.20       0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| DUHYD     (0092) |
| Inlet Cap.=0.309 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.12      1.40   17.85
     ==========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.27      0.12      1.40   17.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0102) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      48.81         6.41
               over (min)        12.00        24.00
     Storage Coeff.  (min)=       1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00        24.00
     Unit Hyd. peak  (cms)=       0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.09         0.03      0.107 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=      23.97         4.89       9.65
     TOTAL RAINFALL   (mm)=      24.97        24.97      24.97
     RUNOFF COEFFICIENT   =       0.96         0.20       0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| STANDHYD  (0103) |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      48.81         6.41
               over (min)        12.00        24.00
     Storage Coeff.  (min)=       1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00        24.00
     Unit Hyd. peak  (cms)=       0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.44         0.04      0.464 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=      23.97         4.89      15.57
     TOTAL RAINFALL   (mm)=      24.97        24.97      24.97
     RUNOFF COEFFICIENT   =       0.96         0.20       0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0102):     2.71   0.107     1.40     9.65
        + ID2= 2 (0103):     5.86   0.464     1.40    15.57
          ==========================================================
          ID = 3 (0104):     8.57   0.570     1.40    13.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0104):     8.57   0.570     1.40    13.70
        + ID2= 2 (0081):     1.34   0.139     1.40    19.19
          ==========================================================
          ID = 1 (0104):     9.91   0.709     1.40    14.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH 0092 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0104):     9.91   0.709     1.40    14.44
        + ID2= 2 (0092):     0.00   0.000     0.00     0.00
          ==========================================================
          ID = 3 (0104):     9.91   0.709     1.40    14.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 3 (0104):     9.91   0.709     1.40    14.44
        + ID2= 2 (0093):     2.98   0.305     1.40    19.04
          ==========================================================
          ID = 1 (0104):    12.89   1.014     1.40    15.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
          ID1= 1 (0104):    12.89   1.014     1.40    15.51
        + ID2= 2 (0094):     2.25   0.190     1.40    16.33
          ==========================================================
          ID = 3 (0104):    15.14   1.204     1.40    15.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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CALIB					
STANDHYD (0083)	Area (ha)= 3.28				
ID= 1 DT=12.0 min	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	2.30	0.98	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.31	0.01	0.318 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	18.24
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0091)	Area (ha)= 2.50				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.38	1.12	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.19	0.02	0.195 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.38
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)					
Inlet Cap.=0.502					
#of Inlets= 1					
Total(cms)= 0.5		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		2.50	0.19	1.40	15.38
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		2.50	0.19	1.40	15.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0109)	Area (ha)= 10.16				
ID= 1 DT=12.0 min	Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.71	3.45	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.91	0.05	0.934 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.48
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0109):		10.16	0.934	1.40	17.48
+ ID2= 2 (0083):		3.28	0.318	1.40	18.24
ID = 3 (0107):		13.44	1.252	1.40	17.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0107):		13.44	1.252	1.40	17.67
+ ID2= 2 (0089):		1.50	0.134	1.40	17.09
ID = 1 (0107):		14.94	1.386	1.40	17.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0107):		14.94	1.386	1.40	17.61
+ ID2= 2 (0090):		2.50	0.195	1.40	15.38
ID = 3 (0107):		17.44	1.581	1.40	17.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0107):		17.44	1.581	1.40	17.29
+ ID2= 2 (0092):		1.27	0.120	1.40	17.85
ID = 1 (0107):		18.71	1.701	1.40	17.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.7020	0.4508
	0.0190	0.0711	1.0110	0.9482
	0.0360	0.1863	1.0260	0.9798

0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.710	1.701	1.40	17.33
OUTFLOW: ID= 1 (0106)	18.710	0.045	4.00	17.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.64
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.2796

ROUTE PIPE (0105)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.71	0.04	4.00	17.28	0.09	0.90
OUTFLOW: ID= 1 (0105)	18.71	0.04	4.10	17.28	0.09	0.89

ADD HYD (0099)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.14	1.204	1.40	15.63
+ ID2= 2 (0105):	18.71	0.045	4.10	17.28
ID = 3 (0099):	33.85	1.221	1.40	16.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099)
3 + 1 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0144 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0099):	33.85	1.221	1.40	16.54
+ ID2= 2 (0144):	0.00	0.000	0.00	0.00
ID = 1 (0099):	33.85	1.221	1.40	16.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7390	1.4514
0.0190	0.0906	0.8290	1.8600
0.0770	0.2799	1.1240	1.9075
0.2960	0.3787	5.4930	2.2479
0.3520	0.4123	13.3920	2.4903

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0099)	33.850	1.221	1.40	16.54
OUTFLOW: ID= 1 (0098)	33.850	0.060	4.10	16.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.93
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.2251

CALIB
NASHYD (0123)
ID= 1 DT=12.0 min

Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.019 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 2.955
TOTAL RAINFALL (mm)= 24.969
RUNOFF COEFFICIENT = 0.118

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0124)
ID= 1 DT=12.0 min

Area (ha)= 2.59 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.025 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 3.522
TOTAL RAINFALL (mm)= 24.969
RUNOFF COEFFICIENT = 0.141

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0086)
ID= 1 DT=12.0 min

Area (ha)= 10.18
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	7.63	2.55
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	2.00	2.00
Length (m)=	30.00	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	48.81	6.41
over (min)	12.00	24.00
Storage Coeff. (min)=	1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=	12.00	24.00
Unit Hyd. peak (cms)=	0.14	0.06

			TOTALS
PEAK FLOW (cms)=	1.04	0.04	1.053 (iii)
TIME TO PEAK (hrs)=	1.40	1.60	1.40
RUNOFF VOLUME (mm)=	23.97	4.89	19.20
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.96	0.20	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0087)
ID= 1 DT=12.0 min

Area (ha)= 2.21
Total Imp(%)= 85.00 Dir. Conn.(%)= 85.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.33
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06
			TOTALS
PEAK FLOW	(cms)=	0.25	0.00 0.257 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60 1.40
RUNOFF VOLUME	(mm)=	23.97	4.89 21.10
TOTAL RAINFALL	(mm)=	24.97	24.97 24.97
RUNOFF COEFFICIENT	=	0.96	0.20 0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0097)
ID= 1 DT=12.0 min

Area (ha)= 0.85
Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06
			TOTALS
PEAK FLOW	(cms)=	0.03	0.01 0.037 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60 1.40
RUNOFF VOLUME	(mm)=	23.97	4.89 10.22
TOTAL RAINFALL	(mm)=	24.97	24.97 24.97
RUNOFF COEFFICIENT	=	0.96	0.20 0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0125)
ID= 1 DT=12.0 min

Area (ha)= 6.71
Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.37	1.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06
			TOTALS
PEAK FLOW	(cms)=	0.73	0.02 0.737 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60 1.40
RUNOFF VOLUME	(mm)=	23.97	4.89 20.15
TOTAL RAINFALL	(mm)=	24.97	24.97 24.97
RUNOFF COEFFICIENT	=	0.96	0.20 0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0123):	1.61	0.019	1.40	2.95
+ ID2= 2 (0124):	2.59	0.025	1.60	3.52
ID = 3 (0122):	4.20	0.042	1.40	3.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	4.20	0.042	1.40	3.30
+ ID2= 2 (0125):	6.71	0.737	1.40	20.15
ID = 1 (0122):	10.91	0.780	1.40	13.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	10.91	0.780	1.40	13.67
+ ID2= 2 (0086):	10.18	1.053	1.40	19.20
ID = 3 (0122):	21.09	1.833	1.40	16.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0122):	21.09	1.833	1.40	16.34
+ ID2= 2 (0087):	2.21	0.257	1.40	21.10
ID = 1 (0122):	23.30	2.090	1.40	16.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	23.30	2.090	1.40	16.79
+ ID2= 2 (0097):	0.85	0.037	1.40	10.22
ID = 3 (0122):	24.15	2.127	1.40	16.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0131)
ID= 1 DT=12.0 min

Area (ha)= 6.53 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.067 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 3.437
TOTAL RAINFALL (mm)= 24.969
RUNOFF COEFFICIENT = 0.138

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0128)	Area (ha)= 2.34		
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.29	1.05	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.17	0.01	0.182 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.38
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0130)	Area (ha)= 0.97		
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.62	0.35	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.08	0.00	0.087 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.09
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0128):	2.34	0.182	1.40	15.38	
+ ID2= 2 (0130):	0.97	0.087	1.40	17.09	
ID = 3 (0129):	3.31	0.269	1.40	15.88	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 (0129):	3.31	0.269	1.40	15.88	
+ ID2= 2 (0131):	6.53	0.067	1.40	3.44	
ID = 1 (0129):	9.84	0.336	1.40	7.62	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0134)	Area (ha)= 0.91	Curve Number (CN)= 74.0	
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.17		

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW	(cms)=	0.010 (i)
TIME TO PEAK	(hrs)=	1.400
RUNOFF VOLUME	(mm)=	3.342
TOTAL RAINFALL	(mm)=	24.969
RUNOFF COEFFICIENT	=	0.134

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0095)	Area (ha)= 2.95		
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.74	2.21	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.10	0.03	0.116 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	9.66
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB			
STANDHYD (0133)	Area (ha)= 6.86		
ID= 1 DT=12.0 min	Total Imp(%)= 61.00	Dir. Conn.(%)= 61.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	4.18	2.68	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.	(mm/hr)=	48.81	6.41	
over	(min)	12.00	24.00	
Storage Coeff.	(min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak	(min)=	12.00	24.00	
Unit Hyd. peak	(cms)=	0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.57	0.04	0.587 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	16.53
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0135) ID= 1 DT=12.0 min	Area (ha)= 3.87 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	2.36	1.51	
Dep. Storage (mm)=	1.00	1.50	
Average Slope (%)=	2.00	2.00	
Length (m)=	30.00	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	48.81	6.41	
over (min)	12.00	24.00	
Storage Coeff. (min)=	1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=	12.00	24.00	
Unit Hyd. peak (cms)=	0.14	0.06	
			TOTALS
PEAK FLOW (cms)=	0.32	0.02	0.331 (iii)
TIME TO PEAK (hrs)=	1.40	1.60	1.40
RUNOFF VOLUME (mm)=	23.97	4.89	16.52
TOTAL RAINFALL (mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT =	0.96	0.20	0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0132) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0133):	6.86	0.587	1.40	16.53
+ ID2= 2 (0134):	0.91	0.010	1.40	3.34
ID = 3 (0132):	7.77	0.597	1.40	14.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0132):	7.77	0.597	1.40	14.98
+ ID2= 2 (0135):	3.87	0.331	1.40	16.52
ID = 1 (0132):	11.64	0.928	1.40	15.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	0.928	1.40	15.49
+ ID2= 2 (0095):	2.95	0.116	1.40	9.66
ID = 3 (0132):	14.59	1.044	1.40	14.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4563
	0.1220	0.1110	0.8770	0.7650
	0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	1.044	1.40	14.31
OUTFLOW: ID= 1 (0127)	14.590	0.160	1.90	14.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.32
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1268

ROUTE PIPE (0119) IN= 2---> OUT= 1 DT= 5.0 min	PIPE Number = 1.00 Diameter (mm)=1650.00 Length (m)= 500.00 Slope (m/m)= 0.005 Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.16	1.90	14.30	0.18	1.26
OUTFLOW: ID= 1 (0119)	14.59	0.16	2.00	14.30	0.18	1.26

ADD HYD (0118) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.160	2.00	14.30
+ ID2= 2 (0129):	9.84	0.336	1.40	7.62
ID = 3 (0118):	24.43	0.380	1.40	11.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6510	0.4564
	0.1220	0.0863	0.8770	0.7894
	0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	0.380	1.40	11.61
OUTFLOW: ID= 1 (0126)	24.430	0.131	3.30	11.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.54
TIME SHIFT OF PEAK FLOW (min)=114.00
MAXIMUM STORAGE USED (ha.m.)= 0.0892

ADD HYD (0121) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 (0122):	24.15	2.127	1.40	16.56
+ ID2= 2 (0126):	24.43	0.131	3.30	11.60
ID = 3 (0121):	48.58	2.161	1.40	14.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	2.161	1.40	14.06
OUTFLOW: ID= 1 (0120)	48.580	0.099	5.40	14.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.57
TIME SHIFT OF PEAK FLOW (min)=240.00
MAXIMUM STORAGE USED (ha.m.)= 0.4408

****
** SIMULATION NUMBER: 8 **
****

READ STORM
Ptotal=177.00 mm

Filename: C:\Users\DMcBrayne\AppData\Local\Temp\64bb3598-a470-4a6a-a565-94bc9e57a3dd\70fb0dbb
Comments: 100-Year 12-Hour SCS II Design Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.21	6.25	15.93	12.25	2.21	18.25	15.93
0.50	2.21	6.50	15.93	12.50	2.21	18.50	15.93
0.75	2.21	6.75	7.08	12.75	2.21	18.75	7.08
1.00	2.21	7.00	7.08	13.00	2.21	19.00	7.08
1.25	2.21	7.25	5.31	13.25	2.21	19.25	5.31
1.50	2.21	7.50	5.31	13.50	2.21	19.50	5.31
1.75	2.21	7.75	5.31	13.75	2.21	19.75	5.31
2.00	2.21	8.00	5.31	14.00	2.21	20.00	5.31
2.25	2.65	8.25	3.10	14.25	2.65	20.25	3.10
2.50	2.65	8.50	3.10	14.50	2.65	20.50	3.10
2.75	2.65	8.75	3.10	14.75	2.65	20.75	3.10
3.00	2.65	9.00	3.10	15.00	2.65	21.00	3.10
3.25	3.54	9.25	3.10	15.25	3.54	21.25	3.10
3.50	3.54	9.50	3.10	15.50	3.54	21.50	3.10
3.75	3.54	9.75	3.10	15.75	3.54	21.75	3.10
4.00	3.54	10.00	3.10	16.00	3.54	22.00	3.10
4.25	5.31	10.25	1.77	16.25	5.31	22.25	1.77
4.50	5.31	10.50	1.77	16.50	5.31	22.50	1.77
4.75	7.08	10.75	1.77	16.75	7.08	22.75	1.77
5.00	7.08	11.00	1.77	17.00	7.08	23.00	1.77
5.25	10.62	11.25	1.77	17.25	10.62	23.25	1.77
5.50	10.62	11.50	1.77	17.50	10.62	23.50	1.77
5.75	42.48	11.75	1.77	17.75	42.48	23.75	1.77
6.00	116.82	12.00	1.77	18.00	116.82	24.00	1.77

CALIB
NASHYD (0114)
ID= 1 DT=12.0 min

Area (ha)= 2.11 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.26

NOTE: RAINFALL WAS TRANSFORMED TO 12.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.200	2.21	6.200	15.93	12.200	2.21	18.20	15.93
0.400	2.21	6.400	15.93	12.400	2.21	18.40	15.93
0.600	2.21	6.600	11.51	12.600	2.21	18.60	11.51
0.800	2.21	6.800	7.08	12.800	2.21	18.80	7.08
1.000	2.21	7.000	7.08	13.000	2.21	19.00	7.08
1.200	2.21	7.200	5.31	13.200	2.21	19.20	5.31
1.400	2.21	7.400	5.31	13.400	2.21	19.40	5.31
1.600	2.21	7.600	5.31	13.600	2.21	19.60	5.31
1.800	2.21	7.800	5.31	13.800	2.21	19.80	5.31
2.000	2.21	8.000	5.31	14.000	2.21	20.00	5.31
2.200	2.65	8.200	3.10	14.200	2.65	20.20	3.10
2.400	2.65	8.400	3.10	14.400	2.65	20.40	3.10
2.600	2.65	8.600	3.10	14.600	2.65	20.60	3.10
2.800	2.65	8.800	3.10	14.800	2.65	20.80	3.10
3.000	2.66	9.000	3.10	15.000	2.65	21.00	3.10
3.200	3.54	9.200	3.10	15.200	3.54	21.20	3.10
3.400	3.54	9.400	3.10	15.400	3.54	21.40	3.10
3.600	3.54	9.600	3.10	15.600	3.54	21.60	3.10
3.800	3.54	9.800	3.10	15.800	3.54	21.80	3.10
4.000	3.54	10.000	3.10	16.000	3.54	22.00	3.10
4.200	5.31	10.200	1.77	16.200	5.31	22.20	1.77
4.400	5.31	10.400	1.77	16.400	5.31	22.40	1.77
4.600	6.19	10.600	1.77	16.600	6.19	22.60	1.77
4.800	7.08	10.800	1.77	16.800	7.08	22.80	1.77
5.000	7.08	11.000	1.77	17.000	7.08	23.00	1.77
5.200	10.62	11.200	1.77	17.200	10.62	23.20	1.77
5.400	10.62	11.400	1.77	17.400	10.62	23.40	1.77
5.600	26.55	11.600	1.77	17.600	26.55	23.60	1.77
5.800	61.06	11.800	1.77	17.800	61.06	23.80	1.77
6.000	116.82	12.000	1.77	18.000	116.82	24.00	1.77

Unit Hyd Qpeak (cms)= 0.310

PEAK FLOW (cms)= 0.346 (i)
TIME TO PEAK (hrs)= 18.000
RUNOFF VOLUME (mm)= 111.040
TOTAL RAINFALL (mm)= 177.000
RUNOFF COEFFICIENT = 0.627

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0084)
ID= 1 DT=12.0 min

Area (ha)= 10.64
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.45	3.19
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	98.64
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	3.236 (iii)
TIME TO PEAK	(hrs)=	18.00
RUNOFF VOLUME	(mm)=	158.10
TOTAL RAINFALL	(mm)=	177.00
RUNOFF COEFFICIENT	=	0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0085)
ID= 1 DT=12.0 min

Area (ha)= 8.54
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.55	2.99
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.	(mm/hr)=	116.82	98.64
over	(min)	12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00

Unit Hyd. peak	(cms)=	0.14	0.12	
				TOTALS
PEAK FLOW	(cms)=	1.80	0.77	2.569 (iii)
TIME TO PEAK	(hrs)=	6.00	18.00	18.00
RUNOFF VOLUME	(mm)=	176.00	116.34	155.12
TOTAL RAINFALL	(mm)=	177.00	177.00	177.00
RUNOFF COEFFICIENT	=	0.99	0.66	0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0108) | Area (ha)= 1.50
ID= 1 DT=12.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.96	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.31	0.14 0.450 (iii)
TIME TO PEAK	(hrs)=	6.00	18.00 18.00
RUNOFF VOLUME	(mm)=	176.00	116.34 154.52
TOTAL RAINFALL	(mm)=	177.00	177.00 177.00
RUNOFF COEFFICIENT	=	0.99	0.66 0.87

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.45	18.00	154.52
MAJOR SYS.(ID= 2):	0.07	0.10	18.00	154.52
MINOR SYS.(ID= 3):	1.43	0.35	6.00	154.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113) | Area (ha)= 1.21
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	0.22	0.14 0.356 (iii)
TIME TO PEAK	(hrs)=	6.00	18.00 18.00
RUNOFF VOLUME	(mm)=	176.00	116.34 149.15
TOTAL RAINFALL	(mm)=	177.00	177.00 177.00
RUNOFF COEFFICIENT	=	0.99	0.66 0.84

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.36	18.00	149.15
MAJOR SYS.(ID= 2):	0.17	0.19	18.00	149.15
MINOR SYS.(ID= 3):	1.04	0.17	6.00	149.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115) | Area (ha)= 17.98
ID= 1 DT=12.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff.	(min)=	0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak	(min)=	12.00	12.00
Unit Hyd. peak	(cms)=	0.14	0.12
			TOTALS
PEAK FLOW	(cms)=	3.56	1.80 5.360 (iii)
TIME TO PEAK	(hrs)=	6.00	18.00 18.00
RUNOFF VOLUME	(mm)=	176.00	116.34 152.73
TOTAL RAINFALL	(mm)=	177.00	177.00 177.00
RUNOFF COEFFICIENT	=	0.99	0.66 0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.346	18.00	111.04
+ ID2= 2 (0115):	17.98	5.360	18.00	152.73
ID = 3 (0112):	20.09	5.706	18.00	148.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	20.09	5.706	18.00	148.35
+ ID2= 2 (0145):	0.17	0.187	18.00	149.15
ID = 1 (0112):	20.26	5.893	18.00	148.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0112):	20.26	5.893	18.00	148.36
	+ ID2= 2 (0084):	10.64	3.236	18.00	158.10
	ID = 3 (0112):	30.90	9.129	18.00	151.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0112):	30.90	9.129	18.00	151.71
	+ ID2= 2 (0085):	8.54	2.569	18.00	155.12
	ID = 1 (0112):	39.44	11.698	18.00	152.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0112):	39.44	11.698	18.00	152.45
	+ ID2= 2 (0089):	0.07	0.100	18.00	154.52
	ID = 3 (0112):	39.51	11.798	18.00	152.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0137) ID= 1 DT=12.0 min	Area (ha)= 1.33	Curve Number (CN)= 74.0
	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.13	

Unit Hyd Qpeak (cms)= 0.391

PEAK FLOW	(cms)=	0.267 (i)
TIME TO PEAK	(hrs)=	18.000
RUNOFF VOLUME	(mm)=	91.644
TOTAL RAINFALL	(mm)=	177.000
RUNOFF COEFFICIENT	=	0.518

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD (0096) ID= 1 DT=12.0 min	Area (ha)= 3.62	Total Imp(%)= 28.00	Dir. Conn.(%)= 28.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.01	2.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.998 (iii)
TIME TO PEAK	(hrs)=	18.00
RUNOFF VOLUME	(mm)=	133.04
TOTAL RAINFALL	(mm)=	177.00
RUNOFF COEFFICIENT	=	0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0138) ID= 1 DT=12.0 min	Area (ha)= 1.45	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.93	0.52
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.435 (iii)
TIME TO PEAK	(hrs)=	18.00
RUNOFF VOLUME	(mm)=	154.52
TOTAL RAINFALL	(mm)=	177.00
RUNOFF COEFFICIENT	=	0.87

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0137):	1.33	0.267	18.00	91.64
	+ ID2= 2 (0138):	1.45	0.435	18.00	154.52
	ID = 3 (0136):	2.78	0.702	18.00	124.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0136)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0136):	2.78	0.702	18.00	124.44
	+ ID2= 2 (0096):	3.62	0.998	18.00	133.04
	ID = 1 (0136):	6.40	1.700	18.00	129.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0117) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3260	0.8017
	0.0790	0.1850	0.3960	0.9004
	0.2270	0.3947	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0136)		6.400	1.700	18.00	129.31
OUTFLOW: ID= 1 (0117)		6.400	0.198	18.60	129.21

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.65
TIME SHIFT OF PEAK FLOW (min)= 36.00
MAXIMUM STORAGE USED (ha.m.)= 0.3539

ROUTE PIPE (0116) IN= 2---> OUT= 1 DT= 5.0 min	PIPE Number = 1.00
	Diameter (mm)=1650.00
	Length (m)= 850.00
	Slope (m/m)= 0.005
	Manning n = 0.013

<-------------- TRAVEL TIME TABLE ------------------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.367E+02	0.0	0.80	17.68
0.17	.102E+03	0.1	1.25	11.33
0.26	.184E+03	0.3	1.61	8.81
0.35	.278E+03	0.6	1.91	7.41
0.43	.382E+03	1.0	2.18	6.51
0.52	.492E+03	1.4	2.41	5.88
0.61	.608E+03	1.9	2.61	5.43
0.69	.727E+03	2.4	2.79	5.08
0.78	.848E+03	2.9	2.95	4.81
0.87	.970E+03	3.5	3.08	4.60
0.96	.109E+04	4.1	3.20	4.43
1.04	.121E+04	4.7	3.29	4.31
1.13	.133E+04	5.2	3.36	4.22
1.22	.144E+04	5.8	3.41	4.15
1.30	.154E+04	6.2	3.44	4.12
1.39	.163E+04	6.6	3.43	4.13
1.48	.172E+04	6.9	3.40	4.17
1.56	.178E+04	6.9	3.31	4.28
1.65	.182E+04	6.5	3.02	4.70

		<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.20	18.60	129.21	0.19	1.32
OUTFLOW: ID= 1 (0116)	6.40	0.20	18.70	129.21	0.19	1.32

ADD HYD (0111)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	39.51	11.798	18.00	152.46
+ ID2= 2 (0116):	6.40	0.197	18.70	129.21
ID = 3 (0111):	45.91	11.905	18.00	149.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.4644	1.1181
0.0392	0.1633	1.6231	1.3201
0.0901	0.4190	2.0261	1.9685
0.1513	0.6880	2.6873	2.1410
0.4982	0.8751	6.1638	2.4992
0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.908	11.905	18.00	149.27
OUTFLOW: ID= 1 (0110)	45.908	2.538	18.20	149.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.32
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 2.1053

DUHYD (0144)
Inlet Cap.=2.026
#of Inlets= 1
Total(cms)= 2.0

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	45.91	2.54	18.20	149.25
MAJOR SYS.(ID= 2):	0.55	0.51	18.20	149.25
MINOR SYS.(ID= 3):	45.35	2.03	18.10	149.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0081)
ID= 1 DT=12.0 min

Area (ha)= 1.34
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.00	0.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW (cms)=		0.33	0.09 0.412 (iii)
TIME TO PEAK (hrs)=		6.00	18.00 18.00
RUNOFF VOLUME (mm)=		176.00	116.34 161.08
TOTAL RAINFALL (mm)=		177.00	177.00 177.00
RUNOFF COEFFICIENT =		0.99	0.66 0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0082)
ID= 1 DT=12.0 min

Area (ha)= 2.51
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW (cms)=		0.61	0.16 0.772 (iii)
TIME TO PEAK (hrs)=		6.00	18.00 18.00
RUNOFF VOLUME (mm)=		176.00	116.34 161.08
TOTAL RAINFALL (mm)=		177.00	177.00 177.00
RUNOFF COEFFICIENT =		0.99	0.66 0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0101)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12
			TOTALS
PEAK FLOW (cms)=		0.11	0.04 0.143 (iii)
TIME TO PEAK (hrs)=		6.00	18.00 18.00
RUNOFF VOLUME (mm)=		176.00	116.34 158.09
TOTAL RAINFALL (mm)=		177.00	177.00 177.00
RUNOFF COEFFICIENT =		0.99	0.66 0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

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          CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0088) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
          ID1= 1 (0101):     0.47   0.143    18.00   158.09
        + ID2= 2 (0082):     2.51   0.772    18.00   161.08
          ================================================
          ID = 3 (0088):     2.98   0.915    18.00   160.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| DUHYD     (0093) |
| Inlet Cap.=0.934 |
| #of Inlets=    1 |
| Total(cms)=  0.9 |       AREA     QPEAK     TPEAK    R.V.
--------------------        (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.98      0.91     18.00  160.61
     ========================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.98      0.91     18.00  160.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0094) |   Area    (ha)=   2.25
|ID= 1 DT=12.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.35         0.90
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        98.64
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.44         0.23          0.669 (iii)
     TIME TO PEAK    (hrs)=       6.00        18.00           18.00
     RUNOFF VOLUME    (mm)=     176.00       116.34         152.13
     TOTAL RAINFALL   (mm)=     177.00       177.00         177.00
     RUNOFF COEFFICIENT   =       0.99         0.66           0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0100) |   Area    (ha)=   1.27
|ID= 1 DT=12.0 min |   Total Imp(%)=  68.00   Dir. Conn.(%)=  68.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.86         0.41
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        98.64
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.28         0.10          0.385 (iii)
     TIME TO PEAK    (hrs)=       6.00        18.00           18.00
     RUNOFF VOLUME    (mm)=     176.00       116.34         156.91
     TOTAL RAINFALL   (mm)=     177.00       177.00         177.00
     RUNOFF COEFFICIENT   =       0.99         0.66           0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| DUHYD     (0092) |
| Inlet Cap.=0.309 |
| #of Inlets=    1 |
| Total(cms)=  0.3 |       AREA     QPEAK     TPEAK    R.V.
--------------------        (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.27      0.38     18.00  156.91
     ========================================================
     MAJOR SYS.(ID= 2):   0.05      0.08     18.00  156.91
     MINOR SYS.(ID= 3):   1.22      0.31      6.00  156.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD  (0102) |   Area    (ha)=   2.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.68         2.03
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        98.64
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.22         0.52          0.742 (iii)
     TIME TO PEAK    (hrs)=       6.00        18.00           18.00
     RUNOFF VOLUME    (mm)=     176.00       116.34         131.25
     TOTAL RAINFALL   (mm)=     177.00       177.00         177.00
     RUNOFF COEFFICIENT   =       0.99         0.66           0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0103) |   Area    (ha)=   5.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  56.00   Dir. Conn.(%)=  56.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.28         2.58
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     116.82        98.64
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.06         0.66          1.727 (iii)
     TIME TO PEAK    (hrs)=       6.00        18.00           18.00
     RUNOFF VOLUME    (mm)=     176.00       116.34         149.75
     TOTAL RAINFALL   (mm)=     177.00       177.00         177.00
     RUNOFF COEFFICIENT   =       0.99         0.66           0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0102):		2.71	0.742	18.00	131.25
+ ID2= 2 (0103):		5.86	1.727	18.00	149.75
ID = 3 (0104):		8.57	2.469	18.00	143.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0104):		8.57	2.469	18.00	143.90
+ ID2= 2 (0081):		1.34	0.412	18.00	161.08
ID = 1 (0104):		9.91	2.881	18.00	146.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		9.91	2.881	18.00	146.22
+ ID2= 2 (0092):		0.05	0.076	18.00	156.91
ID = 3 (0104):		9.96	2.956	18.00	146.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0104):		9.96	2.956	18.00	146.28
+ ID2= 2 (0093):		2.98	0.915	18.00	160.61
ID = 1 (0104):		12.94	3.871	18.00	149.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		12.94	3.871	18.00	149.58
+ ID2= 2 (0094):		2.25	0.669	18.00	152.13
ID = 3 (0104):		15.19	4.540	18.00	149.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0083)	Area (ha)= 3.28				
ID= 1 DT=12.0 min	Total Imp(%)= 70.00		Dir. Conn.(%)= 70.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.30	0.98
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.75 (iii)
TIME TO PEAK	(hrs)=	18.00
RUNOFF VOLUME	(mm)=	158.10
TOTAL RAINFALL	(mm)=	177.00
RUNOFF COEFFICIENT	=	0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0091)	Area (ha)= 2.50				
ID= 1 DT=12.0 min	Total Imp(%)= 55.00		Dir. Conn.(%)= 55.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.735 (iii)
TIME TO PEAK	(hrs)=	18.00
RUNOFF VOLUME	(mm)=	149.15
TOTAL RAINFALL	(mm)=	177.00
RUNOFF COEFFICIENT	=	0.84

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.502					
#of Inlets= 1					
Total(cms)= 0.5		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		2.50	0.74	18.00	149.15
MAJOR SYS.(ID= 2):		0.18	0.23	18.00	149.15
MINOR SYS.(ID= 3):		2.32	0.50	6.00	149.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0109)	Area (ha)= 10.16				
ID= 1 DT=12.0 min	Total Imp(%)= 66.00		Dir. Conn.(%)= 66.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.71	3.45
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	3.063 (iii)
TIME TO PEAK	(hrs)=	18.00

RUNOFF VOLUME (mm)=	176.00	116.34	155.72
TOTAL RAINFALL (mm)=	177.00	177.00	177.00
RUNOFF COEFFICIENT =	0.99	0.66	0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0109):	10.16	3.063	18.00	155.72
+ ID2= 2 (0083):	3.28	0.998	18.00	158.10
ID = 3 (0107):	13.44	4.061	18.00	156.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	13.44	4.061	18.00	156.30
+ ID2= 2 (0089):	1.43	0.350	6.00	154.52
ID = 1 (0107):	14.87	4.411	18.00	156.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.87	4.411	18.00	156.13
+ ID2= 2 (0090):	2.32	0.502	6.00	149.15
ID = 3 (0107):	17.19	4.913	18.00	155.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.19	4.913	18.00	155.18
+ ID2= 2 (0092):	1.22	0.309	6.00	156.91
ID = 1 (0107):	18.40	5.222	18.00	155.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7020	0.4508
0.0190	0.0711	1.0110	0.9482
0.0360	0.1863	1.0260	0.9798
0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.404	5.222	18.00	155.30
OUTFLOW: ID= 1 (0106)	18.404	0.980	18.20	155.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.77
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.8991

ROUTE PIPE (0105)
IN= 2---> OUT= 1
DT= 5.0 min

PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.40	0.98	18.20	155.25	0.41	2.31
OUTFLOW: ID= 1 (0105)	18.40	0.98	18.30	155.25	0.41	2.30

ADD HYD (0099)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.19	4.540	18.00	149.96
+ ID2= 2 (0105):	18.40	0.982	18.30	155.25
ID = 3 (0099):	33.60	5.386	18.00	152.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0099):	33.60	5.386	18.00	152.94
+ ID2= 2 (0144):	0.55	0.512	18.20	149.25
ID = 1 (0099):	34.15	5.386	18.00	152.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7390	1.4514
0.0190	0.0906	0.8290	1.8600
0.0770	0.2799	1.1240	1.9075
0.2960	0.3787	5.4930	2.2479
0.3520	0.4123	13.3920	2.4903

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0099)	34.150	5.386	18.00	152.88
OUTFLOW: ID= 1 (0098)	34.150	0.776	20.70	152.84

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.41
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 1.6210

CALIB

| NASHYD (0123) | ID= 1 DT=12.0 min | Area (ha)= 1.61 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.13 |

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.323 (i)
TIME TO PEAK (hrs)= 18.000
RUNOFF VOLUME (mm)= 91.644
TOTAL RAINFALL (mm)= 177.000
RUNOFF COEFFICIENT = 0.518

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB NASHYD (0124) | ID= 1 DT=12.0 min | Area (ha)= 2.59 Curve Number (CN)= 74.0 | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.22 |

Unit Hyd Qpeak (cms)= 0.450

PEAK FLOW (cms)= 0.477 (i)
TIME TO PEAK (hrs)= 18.000
RUNOFF VOLUME (mm)= 109.234
TOTAL RAINFALL (mm)= 177.000
RUNOFF COEFFICIENT = 0.617

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB STANDHYD (0086) | ID= 1 DT=12.0 min | Area (ha)= 10.18 | Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00 |

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	7.63	2.55
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	2.48 0.65 3.131 (iii)
TIME TO PEAK	(hrs)=	6.00 18.00 18.00
RUNOFF VOLUME	(mm)=	176.00 116.34 161.08
TOTAL RAINFALL	(mm)=	177.00 177.00 177.00
RUNOFF COEFFICIENT	=	0.99 0.66 0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

| CALIB STANDHYD (0087) | ID= 1 DT=12.0 min | Area (ha)= 2.21 | Total Imp(%)= 85.00 Dir. Conn.(%)= 85.00 |

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.33
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.61 0.09 0.695 (iii)
TIME TO PEAK	(hrs)=	6.00 18.00 18.00
RUNOFF VOLUME	(mm)=	176.00 116.34 167.05
TOTAL RAINFALL	(mm)=	177.00 177.00 177.00
RUNOFF COEFFICIENT	=	0.99 0.66 0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

| CALIB STANDHYD (0097) | ID= 1 DT=12.0 min | Area (ha)= 0.85 | Total Imp(%)= 28.00 Dir. Conn.(%)= 28.00 |

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.24	0.61
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	0.08 0.16 0.234 (iii)
TIME TO PEAK	(hrs)=	6.00 18.00 18.00
RUNOFF VOLUME	(mm)=	176.00 116.34 133.04
TOTAL RAINFALL	(mm)=	177.00 177.00 177.00
RUNOFF COEFFICIENT	=	0.99 0.66 0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

| CALIB STANDHYD (0125) | ID= 1 DT=12.0 min | Area (ha)= 6.71 | Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00 |

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.37	1.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		116.82	98.64
over (min)		12.00	12.00
Storage Coeff. (min)=		0.95 (ii)	5.63 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.12

		TOTALS
PEAK FLOW	(cms)=	1.74 0.34 2.087 (iii)
TIME TO PEAK	(hrs)=	6.00 18.00 18.00
RUNOFF VOLUME	(mm)=	176.00 116.34 164.07
TOTAL RAINFALL	(mm)=	177.00 177.00 177.00
RUNOFF COEFFICIENT	=	0.99 0.66 0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0122) | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0123):	1.61	0.323	18.00	91.64
+ ID2= 2 (0124):	2.59	0.477	18.00	109.23

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          ID = 3 (0122):     4.20   0.800    18.00   102.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0122) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0122):     4.20   0.800    18.00   102.49
        + ID2= 2 (0125):     6.71   2.087    18.00   164.07
          ================================================
          ID = 1 (0122):    10.91   2.887    18.00   140.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0122) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0122):    10.91   2.887    18.00   140.36
        + ID2= 2 (0086):    10.18   3.131    18.00   161.08
          ================================================
          ID = 3 (0122):    21.09   6.018    18.00   150.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0122) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0122):    21.09   6.018    18.00   150.36
        + ID2= 2 (0087):     2.21   0.695    18.00   167.05
          ================================================
          ID = 1 (0122):    23.30   6.712    18.00   151.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0122) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0122):    23.30   6.712    18.00   151.95
        + ID2= 2 (0097):     0.85   0.234    18.00   133.04
          ================================================
          ID = 3 (0122):    24.15   6.947    18.00   151.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB             |
| NASHYD    (0131)  |   Area     (ha)=   6.53   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.19

     Unit Hyd Qpeak  (cms)=   1.313

     PEAK FLOW       (cms)=   1.292 (i)
     TIME TO PEAK    (hrs)=  18.000
     RUNOFF VOLUME    (mm)= 106.600
     TOTAL RAINFALL   (mm)= 177.000
     RUNOFF COEFFICIENT   =   0.602

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB             |
| STANDHYD  (0128)  |   Area     (ha)=   2.34
|ID= 1 DT=12.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     1.29         1.05
     Dep. Storage     (mm)=     1.00         1.50
     Average Slope     (%)=     2.00         2.00
     Length            (m)=    30.00        20.00
     Mannings n           =    0.013        0.250

     Max.Eff.Inten.(mm/hr)=   116.82        98.64
               over (min)        12.00        12.00
     Storage Coeff.  (min)=     0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.42         0.27         0.688 (iii)
     TIME TO PEAK    (hrs)=     6.00        18.00        18.00
     RUNOFF VOLUME    (mm)=   176.00       116.34       149.15
     TOTAL RAINFALL   (mm)=   177.00       177.00       177.00
     RUNOFF COEFFICIENT   =     0.99         0.66         0.84

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB             |
| STANDHYD  (0130)  |   Area     (ha)=   0.97
|ID= 1 DT=12.0 min  |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     0.62         0.35
     Dep. Storage     (mm)=     1.00         1.50
     Average Slope     (%)=     2.00         2.00
     Length            (m)=    30.00        20.00
     Mannings n           =    0.013        0.250

     Max.Eff.Inten.(mm/hr)=   116.82        98.64
               over (min)        12.00        12.00
     Storage Coeff.  (min)=     0.95 (ii)    5.63 (ii)
     Unit Hyd. Tpeak (min)=    12.00        12.00
     Unit Hyd. peak  (cms)=     0.14         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.20         0.09         0.291 (iii)
     TIME TO PEAK    (hrs)=     6.00        18.00        18.00
     RUNOFF VOLUME    (mm)=   176.00       116.34       154.52
     TOTAL RAINFALL   (mm)=   177.00       177.00       177.00
     RUNOFF COEFFICIENT   =     0.99         0.66         0.87

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0129) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0128):     2.34   0.688    18.00   149.15
        + ID2= 2 (0130):     0.97   0.291    18.00   154.52
          ================================================
          ID = 3 (0129):     3.31   0.979    18.00   150.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0129) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0129):     3.31   0.979    18.00   150.72
        + ID2= 2 (0131):     6.53   1.292    18.00   106.60
          ================================================
          ID = 1 (0129):     9.84   2.271    18.00   121.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB             |
| NASHYD    (0134)  |   Area     (ha)=   0.91   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min  |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17
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     Unit Hyd Qpeak  (cms)=   0.204

     PEAK FLOW       (cms)=   0.186 (i)
     TIME TO PEAK    (hrs)=  18.000
     RUNOFF VOLUME    (mm)= 103.651
     TOTAL RAINFALL   (mm)= 177.000
     RUNOFF COEFFICIENT   =   0.586

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB           |
| STANDHYD  (0095) |   Area     (ha)=   2.95
|ID= 1 DT=12.0 min |   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.74          2.21
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     116.82         98.64
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      0.95 (ii)     5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.24          0.57          0.807 (iii)
     TIME TO PEAK    (hrs)=       6.00         18.00          18.00
     RUNOFF VOLUME    (mm)=     176.00        116.34         131.25
     TOTAL RAINFALL   (mm)=     177.00        177.00         177.00
     RUNOFF COEFFICIENT   =       0.99          0.66           0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB           |
| STANDHYD  (0133) |   Area     (ha)=   6.86
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.18          2.68
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     116.82         98.64
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      0.95 (ii)     5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.36          0.69          2.045 (iii)
     TIME TO PEAK    (hrs)=       6.00         18.00          18.00
     RUNOFF VOLUME    (mm)=     176.00        116.34         152.73
     TOTAL RAINFALL   (mm)=     177.00        177.00         177.00
     RUNOFF COEFFICIENT   =       0.99          0.66           0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0135) |   Area     (ha)=   3.87
|ID= 1 DT=12.0 min |   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.36          1.51
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n           =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     116.82         98.64
               over (min)       12.00         12.00
     Storage Coeff.  (min)=      0.95 (ii)     5.63 (ii)
     Unit Hyd. Tpeak (min)=      12.00         12.00
     Unit Hyd. peak  (cms)=       0.14          0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.77          0.39          1.154 (iii)
     TIME TO PEAK    (hrs)=       6.00         18.00          18.00
     RUNOFF VOLUME    (mm)=     176.00        116.34         152.73
     TOTAL RAINFALL   (mm)=     177.00        177.00         177.00
     RUNOFF COEFFICIENT   =       0.99          0.66           0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

-------------------
| ADD HYD   (0132) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0133):      6.86    2.045    18.00   152.73
       + ID2= 2 (0134):      0.91    0.186    18.00   103.65
         ==============================================
         ID = 3 (0132):      7.77    2.231    18.00   146.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

-------------------
| ADD HYD   (0132) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0132):      7.77    2.231    18.00   146.98
       + ID2= 2 (0135):      3.87    1.154    18.00   152.73
         ==============================================
         ID = 1 (0132):     11.64    3.384    18.00   148.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

-------------------
| ADD HYD   (0132) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0132):     11.64    3.384    18.00   148.89
       + ID2= 2 (0095):      2.95    0.807    18.00   131.25
         ==============================================
         ID = 3 (0132):     14.59    4.192    18.00   145.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0127) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.6510     0.4563
                         0.1220     0.1110    |  0.8770     0.7650
                         0.3620     0.2096    |  0.0000     0.0000

                                    AREA     QPEAK     TPEAK      R.V.
                                    (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0132)        14.590     4.192     18.00     145.33
     OUTFLOW: ID= 1 (0127)        14.590     0.744     18.30     145.31

          PEAK  FLOW  REDUCTION [Qout/Qin](%)= 17.75
          TIME SHIFT OF PEAK FLOW       (min)= 18.00
          MAXIMUM  STORAGE  USED      (ha.m.)=  0.5835

--------------------------------------------------------------------------------
-------------------
| ROUTE PIPE (0119)|     PIPE Number     =   1.00
| IN= 2---> OUT= 1 |     Diameter    (mm)=1650.00
| DT=  5.0 min     |     Length       (m)= 500.00
```

```
--------------------     Slope      (m/m)=  0.005
                         Manning n      =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME     FLOW RATE     VELOCITY     TRAV.TIME
         (m)      (cu.m.)       (cms)         (m/s)        min
        0.09     .216E+02        0.0          0.80        10.40
        0.17     .600E+02        0.1          1.25         6.67
        0.26     .108E+03        0.3          1.61         5.18
        0.35     .164E+03        0.6          1.91         4.36
        0.43     .225E+03        1.0          2.18         3.83
        0.52     .290E+03        1.4          2.41         3.46
        0.61     .358E+03        1.9          2.61         3.19
        0.69     .428E+03        2.4          2.79         2.99
        0.78     .499E+03        2.9          2.95         2.83
        0.87     .570E+03        3.5          3.08         2.70
        0.96     .642E+03        4.1          3.20         2.61
        1.04     .712E+03        4.7          3.29         2.53
        1.13     .780E+03        5.2          3.36         2.48
        1.22     .844E+03        5.8          3.41         2.44
        1.30     .905E+03        6.2          3.44         2.43
        1.39     .961E+03        6.6          3.43         2.43
        1.48     .101E+04        6.9          3.40         2.45
        1.56     .105E+04        6.9          3.31         2.52
        1.65     .107E+04        6.5          3.02         2.76
                                    <---- hydrograph ---->   <-pipe / channel->
                                  AREA    QPEAK   TPEAK   R.V.   MAX DEPTH  MAX VEL
                                  (ha)    (cms)   (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0127)   14.59     0.74   18.30 145.31      0.38      1.99
     OUTFLOW: ID= 1 (0119)   14.59     0.74   18.30 145.31      0.38      1.99


--------------------------------------------------------------------------------

--------------------
| ADD HYD   (0118) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0119):    14.59   0.745    18.30   145.31
       + ID2= 2 (0129):     9.84   2.271    18.00   121.44
         ================================================
         ID = 3 (0118):    24.43   2.845    18.00   135.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0126) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  0.6510     0.4564
                         0.1220     0.0863     |  0.8770     0.7894
                         0.3620     0.1603     |  0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0118)     24.430     2.845     18.00      135.81
     OUTFLOW: ID= 1 (0126)     24.430     0.738     19.60      135.80

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 25.94
                TIME SHIFT OF PEAK FLOW          (min)= 96.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.5846

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--------------------
| ADD HYD   (0121) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0122):    24.15   6.947    18.00   151.28
       + ID2= 2 (0126):    24.43   0.738    19.60   135.80
         ================================================
         ID = 3 (0121):    48.58   7.475    18.00   143.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR (0120) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000     |  0.4220     0.9546
                         0.0430     0.1534     |  0.6790     1.3320
                         0.0850     0.4277     |  0.9700     1.6432
                         0.2830     0.6181     |  3.4180     1.8082
                         0.3470     0.6580     | 15.8020     2.2183

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0121)     48.580     7.475     18.00      143.68
     OUTFLOW: ID= 1 (0120)     48.580     3.295     18.20      143.66

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 44.08
                TIME SHIFT OF PEAK FLOW          (min)= 12.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  1.8225

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 FINISH
================================================================================================================
=====
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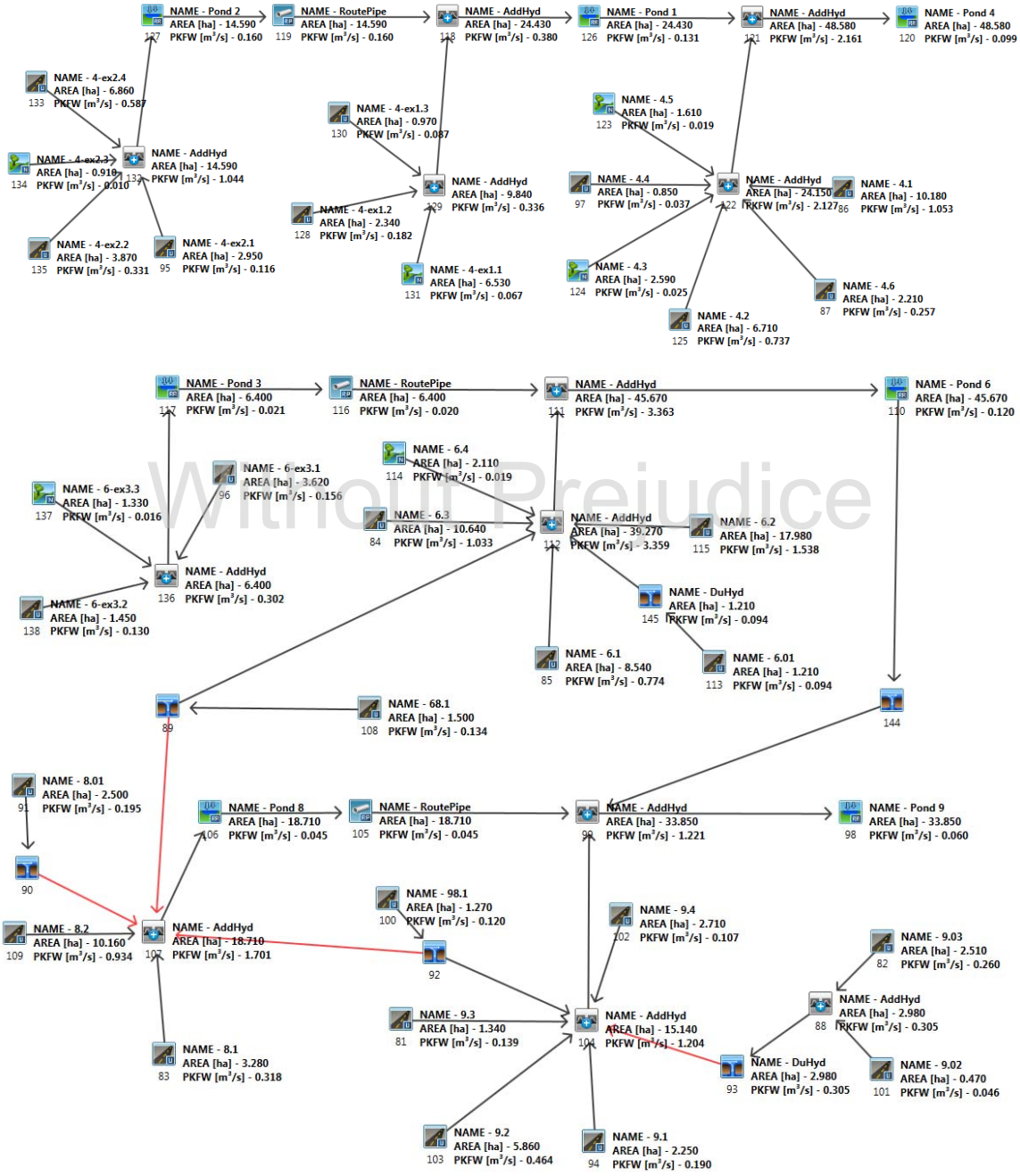
L09-301
Glenway golf course development, Newmarket, ON
25 mm 4 Hour Chicago Storm Post-Development Model Schematic
July 2013

VO2 Model Schematic



```
==========================================================================================
=====

       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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                    *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\40be48c4-9fb3-4ab8-a2c4-
780fc70a168c\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\40be48c4-9fb3-4ab8-a2c4-
780fc70a168c\Scenario.sum

DATE: 07/29/2013                          TIME: 08:12:56

USER:


COMMENTS: _____________________________________________________

-------------------------------------------------------------------------------------------
-----
  ****************************
  ** SIMULATION NUMBER:   7 **
  ****************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1770.000
| Ptotal= 78.03 mm |                          B=   4.000
--------------------                          C=   0.820
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

      TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
       hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
      0.17    4.34  |  1.17   38.21  |    2.17   10.60  |  3.17    5.19
      0.33    5.00  |  1.33  203.31  |    2.33    8.96  |  3.33    4.81
      0.50    5.92  |  1.50   50.96  |    2.50    7.78  |  3.50    4.48
      0.67    7.33  |  1.67   25.51  |    2.67    6.90  |  3.67    4.20
      0.83    9.77  |  1.83   17.18  |    2.83    6.21  |  3.83    3.96
      1.00   15.10  |  2.00   13.06  |    3.00    5.65  |  4.00    3.74


-------------------------------------------------------------------------------
--------------------
| MODIFY STORM     |    MODIFYING PARAMETERS
| CASE= 1          |    Multiplication Factor=  0.32
--------------------    Time shift  (min)    =  0.00

      TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
       hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
     0.167    1.39  | 1.167   12.23  |   2.167    3.39  |  3.17    1.66
     0.333    1.60  | 1.333   65.06  |   2.333    2.87  |  3.33    1.54
     0.500    1.89  | 1.500   16.31  |   2.500    2.49  |  3.50    1.44
     0.667    2.35  | 1.667    8.16  |   2.667    2.21  |  3.67    1.35
     0.833    3.12  | 1.833    5.50  |   2.833    1.99  |  3.83    1.27
     1.000    4.83  | 2.000    4.18  |   3.000    1.81  |  4.00    1.20


-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD    (0114) |    Area     (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |    Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------    U.H. Tp(hrs)=   0.26
```

```
NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
       hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
     0.200    1.42  | 1.200   21.03  |   2.200    3.30  |  3.20    1.64
     0.400    1.70  | 1.400   48.81  |   2.400    2.74  |  3.40    1.50
     0.600    2.12  | 1.600   12.24  |   2.600    2.35  |  3.60    1.39
     0.800    2.87  | 1.800    6.39  |   2.800    2.06  |  3.80    1.29
     1.000    4.55  | 2.000    4.40  |   3.000    1.84  |  4.00    1.21

  Unit Hyd Qpeak  (cms)=   0.310

  PEAK FLOW       (cms)=   0.019 (i)
  TIME TO PEAK    (hrs)=   1.600
  RUNOFF VOLUME    (mm)=   3.580
  TOTAL RAINFALL   (mm)=  24.969
  RUNOFF COEFFICIENT   =   0.143

  (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0084) |    Area     (ha)=  10.64
|ID= 1 DT=12.0 min |    Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
  Surface Area     (ha)=           7.45           3.19
  Dep. Storage     (mm)=           1.00           1.50
  Average Slope     (%)=           2.00           2.00
  Length            (m)=          30.00          20.00
  Mannings n           =          0.013          0.250

  Max.Eff.Inten.(mm/hr)=          48.81           6.41
            over (min)            12.00          24.00
  Storage Coeff.  (min)=           1.34 (ii)     15.32 (ii)
  Unit Hyd. Tpeak (min)=          12.00          24.00
  Unit Hyd. peak  (cms)=           0.14           0.06

                                                          *TOTALS*
  PEAK FLOW       (cms)=           1.01           0.04     1.033 (iii)
  TIME TO PEAK    (hrs)=           1.40           1.60     1.40
  RUNOFF VOLUME    (mm)=          23.97           4.89    18.24
  TOTAL RAINFALL   (mm)=          24.97          24.97    24.97
  RUNOFF COEFFICIENT   =           0.96           0.20     0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0085) |    Area     (ha)=   8.54
|ID= 1 DT=12.0 min |    Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
  Surface Area     (ha)=           5.55           2.99
  Dep. Storage     (mm)=           1.00           1.50
  Average Slope     (%)=           2.00           2.00
  Length            (m)=          30.00          20.00
  Mannings n           =          0.013          0.250

  Max.Eff.Inten.(mm/hr)=          48.81           6.41
            over (min)            12.00          24.00
  Storage Coeff.  (min)=           1.34 (ii)     15.32 (ii)
  Unit Hyd. Tpeak (min)=          12.00          24.00
  Unit Hyd. peak  (cms)=           0.14           0.06

                                                          *TOTALS*
  PEAK FLOW       (cms)=           0.75           0.04     0.774 (iii)
  TIME TO PEAK    (hrs)=           1.40           1.60     1.40
  RUNOFF VOLUME    (mm)=          23.97           4.89    17.29
  TOTAL RAINFALL   (mm)=          24.97          24.97    24.97
  RUNOFF COEFFICIENT   =           0.96           0.20     0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

CALIB STANDHYD (0108) ID= 1 DT=12.0 min	Area (ha)= 1.50 Total Imp(%)= 64.00 Dir. Conn.(%)= 64.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.96	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.13	0.01	0.134 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.09
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089) Inlet Cap.=0.350 #of Inlets= 1 Total(cms)= 0.3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.13	1.40	17.09
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.50	0.13	1.40	17.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0113) ID= 1 DT=12.0 min	Area (ha)= 1.21 Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.67	0.54	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.01	0.094 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.38
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145) Inlet Cap.=0.169 #of Inlets= 1 Total(cms)= 0.2	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.09	1.40	15.38
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.21	0.09	1.40	15.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0115) ID= 1 DT=12.0 min	Area (ha)= 17.98 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	10.97	7.01	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	1.49	0.10	1.538 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	16.53
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.019	1.60	3.58
+ ID2= 2 (0115):	17.98	1.538	1.40	16.53
ID = 3 (0112):	20.09	1.553	1.40	15.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0145 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0112):	20.09	1.553	1.40	15.17
+ ID2= 2 (0145):	0.00	0.000	0.00	0.00
ID = 1 (0112):	20.09	1.553	1.40	15.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	20.09	1.553	1.40	15.17
+ ID2= 2 (0084):	10.64	1.033	1.40	18.24
ID = 3 (0112):	30.73	2.585	1.40	16.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-------------------
| ADD HYD   (0112) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0112):     30.73   2.585     1.40     16.23
       + ID2= 2 (0085):      8.54   0.774     1.40     17.29
         ================================================
         ID = 1 (0112):     39.27   3.359     1.40     16.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------
| ADD HYD   (0112) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0089 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
         ID1= 1 (0112):     39.27   3.359     1.40     16.46
       + ID2= 2 (0089):      0.00   0.000     0.00      0.00
         ================================================
         ID = 3 (0112):     39.27   3.359     1.40     16.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------
| CALIB            |
| NASHYD    (0137) |   Area     (ha)=   1.33   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.016 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   2.955
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.118

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------
| CALIB            |
| STANDHYD  (0096) |   Area     (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     1.01         2.61
     Dep. Storage     (mm)=     1.00         1.50
     Average Slope     (%)=     2.00         2.00
     Length            (m)=    30.00        20.00
     Mannings n            =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=    48.81         6.41
           over (min)      =   12.00        24.00
     Storage Coeff.  (min)=     1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=    12.00        24.00
     Unit Hyd. peak  (cms)=     0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.14         0.04      0.156 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=    23.97         4.89      10.23
     TOTAL RAINFALL   (mm)=    24.97        24.97      24.97
     RUNOFF COEFFICIENT   =     0.96         0.20       0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    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.

-------------------
| CALIB            |
| STANDHYD  (0138) |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     0.93         0.52
     Dep. Storage     (mm)=     1.00         1.50
     Average Slope     (%)=     2.00         2.00
     Length            (m)=    30.00        20.00
     Mannings n            =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=    48.81         6.41
           over (min)      =   12.00        24.00
     Storage Coeff.  (min)=     1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=    12.00        24.00
     Unit Hyd. peak  (cms)=     0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.13         0.01      0.130 (iii)
     TIME TO PEAK    (hrs)=     1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=    23.97         4.89      17.09
     TOTAL RAINFALL   (mm)=    24.97        24.97      24.97
     RUNOFF COEFFICIENT   =     0.96         0.20       0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------
| ADD HYD   (0136) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0137):      1.33   0.016     1.40      2.95
       + ID2= 2 (0138):      1.45   0.130     1.40     17.09
         ================================================
         ID = 3 (0136):      2.78   0.146     1.40     10.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------
| ADD HYD   (0136) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0136):      2.78   0.146     1.40     10.33
       + ID2= 2 (0096):      3.62   0.156     1.40     10.23
         ================================================
         ID = 1 (0136):      6.40   0.302     1.40     10.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------
| RESERVOIR (0117) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------       (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0000    |  0.3260      0.8017
                          0.0790     0.1850    |  0.3960      0.9004
                          0.2270     0.3947    |  0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (0136)      6.400     0.302      1.40       10.27
     OUTFLOW: ID= 1 (0117)      6.400     0.021      2.80       10.18

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.83
                  TIME SHIFT OF PEAK FLOW          (min)= 84.00
                  MAXIMUM  STORAGE   USED        (ha.m.)=  0.0483

-------------------
| ROUTE PIPE (0116)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 850.00
-------------------      Slope       (m/m)=  0.005
                         Manning n        =  0.013

     <----------------- TRAVEL TIME TABLE ------------------->
       DEPTH      VOLUME      FLOW RATE     VELOCITY     TRAV.TIME
         (m)     (cu.m.)        (cms)         (m/s)          min
        0.09    .367E+02         0.0          0.80         17.68
        0.17    .102E+03         0.1          1.25         11.33
        0.26    .184E+03         0.3          1.61          8.81
        0.35    .278E+03         0.6          1.91          7.41
        0.43    .382E+03         1.0          2.18          6.51
```

0.52	.492E+03	1.4	2.41	5.88	
0.61	.608E+03	1.9	2.61	5.43	
0.69	.727E+03	2.4	2.79	5.08	
0.78	.848E+03	2.9	2.95	4.81	
0.87	.970E+03	3.5	3.08	4.60	
0.96	.109E+04	4.1	3.20	4.43	
1.04	.121E+04	4.7	3.29	4.31	
1.13	.133E+04	5.2	3.36	4.22	
1.22	.144E+04	5.8	3.41	4.15	
1.30	.154E+04	6.2	3.44	4.12	
1.39	.163E+04	6.6	3.43	4.13	
1.48	.172E+04	6.9	3.40	4.17	
1.56	.178E+04	6.9	3.31	4.28	
1.65	.182E+04	6.5	3.02	4.70	

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0117)	6.40	0.02	2.80	10.18	0.05	0.80
OUTFLOW: ID= 1 (0116)	6.40	0.02	3.30	10.18	0.05	0.80

ADD HYD (0111)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	39.27	3.359	1.40	16.46
+ ID2= 2 (0116):	6.40	0.020	3.30	10.18
ID = 3 (0111):	45.67	3.363	1.40	15.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0110)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.4644	1.1181
0.0392	0.1633	1.6231	1.3201
0.0901	0.4190	2.0261	1.9685
0.1513	0.6880	2.6873	2.1410
0.4982	0.8751	6.1638	2.4992
0.6461	0.9229	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0111)	45.670	3.363	1.40	15.58
OUTFLOW: ID= 1 (0110)	45.670	0.120	4.00	15.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.57
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.5500

DUHYD (0144)
Inlet Cap.=2.026
#of Inlets= 1
Total(cms)= 2.0

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	45.67	0.12	4.00	15.56
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	45.67	0.12	4.00	15.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0081)
ID= 1 DT=12.0 min

Area (ha)= 1.34
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.00	0.34
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

		TOTALS
PEAK FLOW	(cms)=	0.139 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	19.19
TOTAL RAINFALL	(mm)=	24.97
RUNOFF COEFFICIENT	=	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0082)
ID= 1 DT=12.0 min

Area (ha)= 2.51
Total Imp(%)= 75.00 Dir. Conn.(%)= 75.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.88	0.63
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

		TOTALS
PEAK FLOW	(cms)=	0.260 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	19.19
TOTAL RAINFALL	(mm)=	24.97
RUNOFF COEFFICIENT	=	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0101)
ID= 1 DT=12.0 min

Area (ha)= 0.47
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.33	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

		TOTALS
PEAK FLOW	(cms)=	0.046 (iii)
TIME TO PEAK	(hrs)=	1.40
RUNOFF VOLUME	(mm)=	18.23
TOTAL RAINFALL	(mm)=	24.97
RUNOFF COEFFICIENT	=	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0088)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0101):	0.47	0.046	1.40	18.23
	+ ID2= 2 (0082):	2.51	0.260	1.40	19.19
	ID = 3 (0088):	2.98	0.305	1.40	19.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

DUHYD (0093)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.934					
#of Inlets= 1					
Total(cms)= 0.9		(ha)	(cms)	(hrs)	(mm)
	TOTAL HYD.(ID= 1):	2.98	0.31	1.40	19.04
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	2.98	0.31	1.40	19.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0094) | Area (ha)= 2.25
ID= 1 DT=12.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.35	0.90	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.18	0.01	0.190 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	16.33
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.65

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0100) | Area (ha)= 1.27
ID= 1 DT=12.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 68.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.12	0.01	0.120 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.85
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0092)		AREA	QPEAK	TPEAK	R.V.
Inlet Cap.=0.309					
#of Inlets= 1					
Total(cms)= 0.3		(ha)	(cms)	(hrs)	(mm)
	TOTAL HYD.(ID= 1):	1.27	0.12	1.40	17.85
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	1.27	0.12	1.40	17.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0102) | Area (ha)= 2.71
ID= 1 DT=12.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.03	0.107 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	9.65
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB
STANDHYD (0103) | Area (ha)= 5.86
ID= 1 DT=12.0 min | Total Imp(%)= 56.00 Dir. Conn.(%)= 56.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		48.81	6.41	
over (min)		12.00	24.00	
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)	
Unit Hyd. Tpeak (min)=		12.00	24.00	
Unit Hyd. peak (cms)=		0.14	0.06	
				TOTALS
PEAK FLOW	(cms)=	0.44	0.04	0.464 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.57
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0102):	2.71	0.107	1.40	9.65
	+ ID2= 2 (0103):	5.86	0.464	1.40	15.57
	ID = 3 (0104):	8.57	0.570	1.40	13.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0104):	8.57	0.570	1.40	13.70
	+ ID2= 2 (0081):	1.34	0.139	1.40	19.19
	ID = 1 (0104):	9.91	0.709	1.40	14.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
*** W A R N I N G : HYDROGRAPH 0092 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001					
*** W A R N I N G : HYDROGRAPH 0003 = HYDROGRAPH 0001					
	ID1= 1 (0104):	9.91	0.709	1.40	14.44
	+ ID2= 2 (0092):	0.00	0.000	0.00	0.00
	ID = 3 (0104):	9.91	0.709	1.40	14.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0104):	9.91	0.709	1.40	14.44
	+ ID2= 2 (0093):	2.98	0.305	1.40	19.04
	ID = 1 (0104):	12.89	1.014	1.40	15.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0104):	12.89	1.014	1.40	15.51
	+ ID2= 2 (0094):	2.25	0.190	1.40	16.33
	ID = 3 (0104):	15.14	1.204	1.40	15.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0083) ID= 1 DT=12.0 min	Area (ha)= 3.28	Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.30	0.98
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

				TOTALS
PEAK FLOW	(cms)=	0.31	0.01	0.318 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	18.24
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0091) ID= 1 DT=12.0 min	Area (ha)= 2.50	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.38	1.12
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

				TOTALS
PEAK FLOW	(cms)=	0.19	0.02	0.195 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.38
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0090)					
Inlet Cap.=0.502					
#of Inlets= 1					
Total(cms)= 0.5		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	TOTAL HYD.(ID= 1):	2.50	0.19	1.40	15.38
	MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
	MINOR SYS.(ID= 3):	2.50	0.19	1.40	15.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (0109) ID= 1 DT=12.0 min	Area (ha)= 10.16	Total Imp(%)= 66.00	Dir. Conn.(%)= 66.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.71	3.45
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

				TOTALS
PEAK FLOW	(cms)=	0.91	0.05	0.934 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.48
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0107) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0109):	10.16	0.934	1.40	17.48
+ ID2= 2 (0083):	3.28	0.318	1.40	18.24
ID = 3 (0107):	13.44	1.252	1.40	17.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	13.44	1.252	1.40	17.67
+ ID2= 2 (0089):	1.50	0.134	1.40	17.09
ID = 1 (0107):	14.94	1.386	1.40	17.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0107):	14.94	1.386	1.40	17.61
+ ID2= 2 (0090):	2.50	0.195	1.40	15.38
ID = 3 (0107):	17.44	1.581	1.40	17.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0107):	17.44	1.581	1.40	17.29
+ ID2= 2 (0092):	1.27	0.120	1.40	17.85
ID = 1 (0107):	18.71	1.701	1.40	17.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7020	0.4508
0.0190	0.0711	1.0110	0.9482
0.0360	0.1863	1.0260	0.9798
0.0460	0.2907	1.0950	1.1448
0.5590	0.4269	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0107)	18.710	1.701	1.40	17.33
OUTFLOW: ID= 1 (0106)	18.710	0.045	4.00	17.28

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.64
TIME SHIFT OF PEAK FLOW (min)=156.00
MAXIMUM STORAGE USED (ha.m.)= 0.2796

ROUTE PIPE (0105) IN= 2---> OUT= 1 DT= 5.0 min
PIPE Number = 1.00
Diameter (mm)=1650.00
Length (m)= 467.00
Slope (m/m)= 0.006
Manning n = 0.013

TRAVEL TIME TABLE

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0106)	18.71	0.04	4.00	17.28	0.09	0.90
OUTFLOW: ID= 1 (0105)	18.71	0.04	4.10	17.28	0.09	0.89

ADD HYD (0099) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	15.14	1.204	1.40	15.63
+ ID2= 2 (0105):	18.71	0.045	4.10	17.28
ID = 3 (0099):	33.85	1.221	1.40	16.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
*** W A R N I N G : HYDROGRAPH 0144 <ID= 2> IS DRY.				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003				
ID1= 3 (0099):	33.85	1.221	1.40	16.54
+ ID2= 2 (0144):	0.00	0.000	0.00	0.00
ID = 1 (0099):	33.85	1.221	1.40	16.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.7390	1.4514
0.0190	0.0906	0.8290	1.8600
0.0770	0.2799	1.1240	1.9075
0.2960	0.3787	5.4930	2.2479
0.3520	0.4123	13.3920	2.4903

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0099)	33.850	1.221	1.40	16.54
OUTFLOW: ID= 1 (0098)	33.850	0.060	4.10	16.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.93
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.2251

CALIB NASHYD (0123) ID= 1 DT=12.0 min
Area (ha)= 1.61 Curve Number (CN)= 74.0
Ia (mm)= 5.00 # of Linear Res.(N)= 3.00

```
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.473

     PEAK FLOW       (cms)=   0.019 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   2.955
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.118

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (0124) |   Area     (ha)=   2.59   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.025 (i)
     TIME TO PEAK    (hrs)=   1.600
     RUNOFF VOLUME    (mm)=   3.522
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.141

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0086) |   Area     (ha)=  10.18
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
--------------------

                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.63          2.55
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.04          0.04          1.053 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60          1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89         19.20
     TOTAL RAINFALL   (mm)=      24.97         24.97         24.97
     RUNOFF COEFFICIENT   =       0.96          0.20          0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0087) |   Area     (ha)=   2.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  85.00   Dir. Conn.(%)=  85.00
--------------------

                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.88          0.33
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.25          0.00          0.257 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60          1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89         21.10
     TOTAL RAINFALL   (mm)=      24.97         24.97         24.97
     RUNOFF COEFFICIENT   =       0.96          0.20          0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0097) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.24          0.61
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03          0.01          0.037 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60          1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89         10.22
     TOTAL RAINFALL   (mm)=      24.97         24.97         24.97
     RUNOFF COEFFICIENT   =       0.96          0.20          0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0125) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
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                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.37          1.34
     Dep. Storage     (mm)=       1.00          1.50
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      30.00         20.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=      48.81          6.41
               over (min)        12.00         24.00
     Storage Coeff.  (min)=       1.34 (ii)    15.32 (ii)
     Unit Hyd. Tpeak (min)=      12.00         24.00
     Unit Hyd. peak  (cms)=       0.14          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.73          0.02          0.737 (iii)
     TIME TO PEAK    (hrs)=       1.40          1.60          1.40
     RUNOFF VOLUME    (mm)=      23.97          4.89         20.15
     TOTAL RAINFALL   (mm)=      24.97         24.97         24.97
     RUNOFF COEFFICIENT   =       0.96          0.20          0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0122) |
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)     (cms)    (hrs)     (mm)
         ID1= 1 (0123):     1.61   0.019     1.40     2.95
       + ID2= 2 (0124):     2.59   0.025     1.60     3.52
         ================================================
         ID = 3 (0122):     4.20   0.042     1.40     3.30
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0122):	4.20	0.042	1.40	3.30
	+ ID2= 2 (0125):	6.71	0.737	1.40	20.15
	ID = 1 (0122):	10.91	0.780	1.40	13.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0122):	10.91	0.780	1.40	13.67
	+ ID2= 2 (0086):	10.18	1.053	1.40	19.20
	ID = 3 (0122):	21.09	1.833	1.40	16.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0122):	21.09	1.833	1.40	16.34
	+ ID2= 2 (0087):	2.21	0.257	1.40	21.10
	ID = 1 (0122):	23.30	2.090	1.40	16.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0122):	23.30	2.090	1.40	16.79
	+ ID2= 2 (0097):	0.85	0.037	1.40	10.22
	ID = 3 (0122):	24.15	2.127	1.40	16.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0131)	Area (ha)= 6.53	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.19				

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW (cms)= 0.067 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 3.437
TOTAL RAINFALL (mm)= 24.969
RUNOFF COEFFICIENT = 0.138

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
STANDHYD (0128)	Area (ha)= 2.34			
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

				TOTALS
PEAK FLOW	(cms)=	0.17	0.01	0.182 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	15.38
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0130)	Area (ha)= 0.97			
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		48.81	6.41
over (min)		12.00	24.00
Storage Coeff. (min)=		1.34 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=		12.00	24.00
Unit Hyd. peak (cms)=		0.14	0.06

				TOTALS
PEAK FLOW	(cms)=	0.08	0.00	0.087 (iii)
TIME TO PEAK	(hrs)=	1.40	1.60	1.40
RUNOFF VOLUME	(mm)=	23.97	4.89	17.09
TOTAL RAINFALL	(mm)=	24.97	24.97	24.97
RUNOFF COEFFICIENT	=	0.96	0.20	0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0128):	2.34	0.182	1.40	15.38
	+ ID2= 2 (0130):	0.97	0.087	1.40	17.09
	ID = 3 (0129):	3.31	0.269	1.40	15.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0129):	3.31	0.269	1.40	15.88
	+ ID2= 2 (0131):	6.53	0.067	1.40	3.44
	ID = 1 (0129):	9.84	0.336	1.40	7.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0134)	Area (ha)= 0.91	Curve Number (CN)= 74.0		
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.17			

Unit Hyd Qpeak (cms)= 0.204

```
     PEAK FLOW       (cms)=   0.010 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=   3.342
     TOTAL RAINFALL   (mm)=  24.969
     RUNOFF COEFFICIENT   =   0.134

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB           |
| STANDHYD  (0095)|   Area     (ha)=   2.95
|ID= 1 DT=12.0 min|   Total Imp(%)=  25.00   Dir. Conn.(%)=  25.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.74         2.21
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     48.81         6.41
               over (min)       12.00        24.00
     Storage Coeff.  (min)=      1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=     12.00        24.00
     Unit Hyd. peak  (cms)=      0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.10         0.03      0.116 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=     23.97         4.89       9.66
     TOTAL RAINFALL   (mm)=     24.97        24.97      24.97
     RUNOFF COEFFICIENT   =      0.96         0.20       0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0133)|   Area     (ha)=   6.86
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      4.18         2.68
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     48.81         6.41
               over (min)       12.00        24.00
     Storage Coeff.  (min)=      1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=     12.00        24.00
     Unit Hyd. peak  (cms)=      0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.57         0.04      0.587 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=     23.97         4.89      16.53
     TOTAL RAINFALL   (mm)=     24.97        24.97      24.97
     RUNOFF COEFFICIENT   =      0.96         0.20       0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    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.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD  (0135)|   Area     (ha)=   3.87
|ID= 1 DT=12.0 min|   Total Imp(%)=  61.00   Dir. Conn.(%)=  61.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      2.36         1.51
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     48.81         6.41
               over (min)       12.00        24.00
     Storage Coeff.  (min)=      1.34 (ii)   15.32 (ii)
     Unit Hyd. Tpeak (min)=     12.00        24.00
     Unit Hyd. peak  (cms)=      0.14         0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.32         0.02      0.331 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.60       1.40
     RUNOFF VOLUME    (mm)=     23.97         4.89      16.52
     TOTAL RAINFALL   (mm)=     24.97        24.97      24.97
     RUNOFF COEFFICIENT   =      0.96         0.20       0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0132)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0133):     6.86   0.587     1.40    16.53
        + ID2= 2 (0134):     0.91   0.010     1.40     3.34
          ================================================
          ID = 3 (0132):     7.77   0.597     1.40    14.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0132)|
|   3 +  2 =  1   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0132):     7.77   0.597     1.40    14.98
        + ID2= 2 (0135):     3.87   0.331     1.40    16.52
          ================================================
          ID = 1 (0132):    11.64   0.928     1.40    15.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD   (0132)|
|   1 +  2 =  3   |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0132):    11.64   0.928     1.40    15.49
        + ID2= 2 (0095):     2.95   0.116     1.40     9.66
          ================================================
          ID = 3 (0132):    14.59   1.044     1.40    14.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR (0127)|
| IN= 2---> OUT= 1|
| DT=  5.0 min    |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.6510     0.4563
                         0.1220     0.1110    |  0.8770     0.7650
                         0.3620     0.2096    |  0.0000     0.0000

                                  AREA     QPEAK     TPEAK      R.V.
                                  (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0132)      14.590     1.044      1.40      14.31
     OUTFLOW: ID= 1 (0127)      14.590     0.160      1.90      14.30

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.32
               TIME SHIFT OF PEAK FLOW         (min)= 30.00
               MAXIMUM  STORAGE   USED        (ha.m.)=  0.1268

--------------------------------------------------------------------------------
-------------------
| ROUTE PIPE (0119)|    PIPE Number      =   1.00
| IN= 2---> OUT= 1 |    Diameter    (mm)=1650.00
| DT=  5.0 min     |    Length       (m)= 500.00
-------------------     Slope      (m/m)=  0.005
                        Manning n       =  0.013
```

<----------------- TRAVEL TIME TABLE ------------------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44
1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0127)	14.59	0.16	1.90	14.30	0.18	1.26
OUTFLOW: ID= 1 (0119)	14.59	0.16	2.00	14.30	0.18	1.26

ADD HYD (0118)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0119):	14.59	0.160	2.00	14.30
+ ID2= 2 (0129):	9.84	0.336	1.40	7.62
ID = 3 (0118):	24.43	0.380	1.40	11.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0118)	24.430	0.380	1.40	11.61
OUTFLOW: ID= 1 (0126)	24.430	0.131	3.30	11.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.54
TIME SHIFT OF PEAK FLOW (min)=114.00
MAXIMUM STORAGE USED (ha.m.)= 0.0892

ADD HYD (0121)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0122):	24.15	2.127	1.40	16.56
+ ID2= 2 (0126):	24.43	0.131	3.30	11.60
ID = 3 (0121):	48.58	2.161	1.40	14.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0121)	48.580	2.161	1.40	14.06
OUTFLOW: ID= 1 (0120)	48.580	0.099	5.40	14.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.57
TIME SHIFT OF PEAK FLOW (min)=240.00
MAXIMUM STORAGE USED (ha.m.)= 0.4408

FINISH

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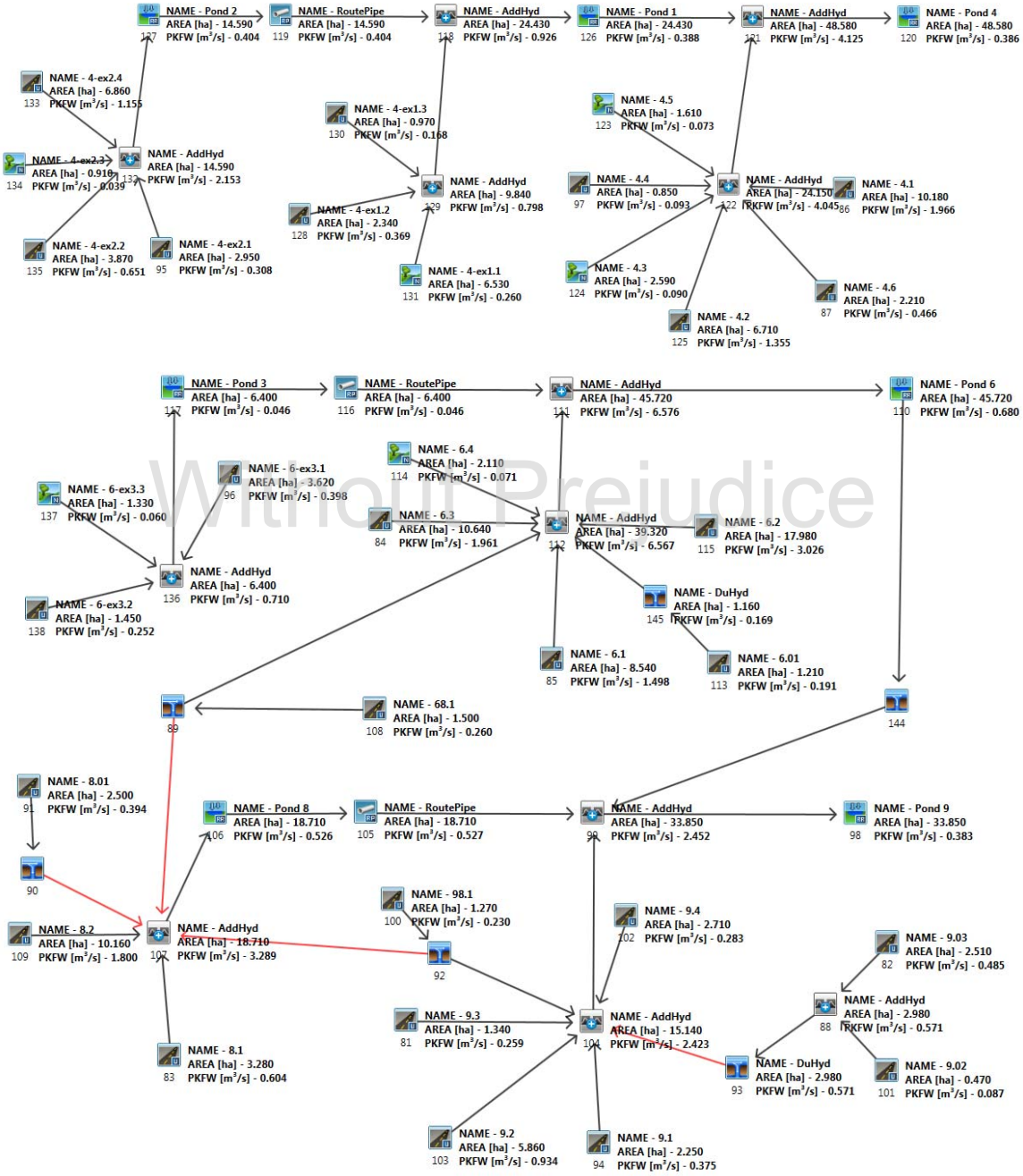
L09-301
Glenway golf course development, Newmarket, ON
5-Year 4 Hour Chicago Storm Post-Development Model Schematic
July 2013

VO2 Model Schematic



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==========================================================================================
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       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O    Company
        OOO     T      T    H   H    Y    M   M   OOO                Serial

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                    *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual Otthymo 3.0\VO2\voin.dat
  Output  filename: C:\Users\DMcBrayne\AppData\Local\Temp\9950f200-7f95-4f9c-a6fb-
96fef2a1349c\Scenario.out
  Summary filename: C:\Users\DMcBrayne\AppData\Local\Temp\9950f200-7f95-4f9c-a6fb-
96fef2a1349c\Scenario.sum


DATE: 07/29/2013                          TIME: 08:36:14

USER:


COMMENTS: _____

------------------------------------------------------------------------------------------
-----
  ****************************
  ** SIMULATION NUMBER:   2 **
  ****************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 930.000
| Ptotal= 46.27 mm |                          B=   4.000
--------------------                          C=   0.798
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

    TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
     hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
    0.17    2.85  |  1.17   22.78  |  2.17    6.72  |  3.17    3.39
    0.33    3.26  |  1.33  113.21  |  2.33    5.72  |  3.33    3.14
    0.50    3.84  |  1.50   30.05  |  2.50    4.99  |  3.50    2.94
    0.67    4.72  |  1.67   15.54  |  2.67    4.45  |  3.67    2.76
    0.83    6.21  |  1.83   10.66  |  2.83    4.02  |  3.83    2.61
    1.00    9.42  |  2.00    8.20  |  3.00    3.67  |  4.00    2.47


------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD    (0114) |   Area     (ha)=   2.11   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.26

        NOTE:  RAINFALL WAS TRANSFORMED TO  12.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN  |  TIME    RAIN  | '  TIME    RAIN  |  TIME    RAIN
     hrs   mm/hr  |   hrs   mm/hr  | '   hrs   mm/hr  |   hrs   mm/hr
   0.200    2.92  | 1.200   37.85  | 2.200    6.55  |  3.20    3.35
   0.400    3.45  | 1.400   85.49  | 2.400    5.48  |  3.40    3.08
   0.600    4.28  | 1.600   22.80  | 2.600    4.72  |  3.60    2.85
   0.800    5.71  | 1.800   12.29  | 2.800    4.16  |  3.80    2.66
   1.000    8.88  | 2.000    8.61  | 3.000    3.73  |  4.00    2.49

     Unit Hyd Qpeak  (cms)=    0.310

     PEAK FLOW       (cms)=    0.071 (i)
     TIME TO PEAK    (hrs)=    1.600
     RUNOFF VOLUME    (mm)=   12.794
     TOTAL RAINFALL   (mm)=   46.267
     RUNOFF COEFFICIENT   =    0.277

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0084) |   Area     (ha)=  10.64
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      7.45         3.19
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=      1.77         0.19        1.961 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40         1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95        36.17
     TOTAL RAINFALL   (mm)=     46.27        46.27        46.27
     RUNOFF COEFFICIENT   =      0.98         0.32         0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0085) |   Area     (ha)=   8.54
|ID= 1 DT=12.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      5.55         2.99
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
               over (min)       12.00        12.00
     Storage Coeff.  (min)=      1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=      1.32         0.18        1.498 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40         1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95        34.66
     TOTAL RAINFALL   (mm)=     46.27        46.27        46.27
     RUNOFF COEFFICIENT   =      0.98         0.32         0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    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.

------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0108) |   Area     (ha)=   1.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.96         0.54
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n           =     0.013        0.250
```

Max.Eff.Inten.(mm/hr)=	85.49	27.73		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.11		
			TOTALS	
PEAK FLOW (cms)=	0.23	0.03	0.260 (iii)	
TIME TO PEAK (hrs)=	1.40	1.40	1.40	
RUNOFF VOLUME (mm)=	45.27	14.95	34.35	
TOTAL RAINFALL (mm)=	46.27	46.27	46.27	
RUNOFF COEFFICIENT =	0.98	0.32	0.74	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0089)
Inlet Cap.=0.350
#of Inlets= 1
Total(cms)= 0.3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.50	0.26	1.40	34.35
MAJOR SYS.(ID= 2):	0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):	1.50	0.26	1.40	34.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0113) | Area (ha)= 1.21
ID= 1 DT=12.0 min | Total Imp(%)= 55.00 Dir. Conn.(%)= 55.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.67	0.54
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=	85.49	27.73		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.11		
			TOTALS	
PEAK FLOW (cms)=	0.16	0.03	0.191 (iii)	
TIME TO PEAK (hrs)=	1.40	1.40	1.40	
RUNOFF VOLUME (mm)=	45.27	14.95	31.62	
TOTAL RAINFALL (mm)=	46.27	46.27	46.27	
RUNOFF COEFFICIENT =	0.98	0.32	0.68	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0145)
Inlet Cap.=0.169
#of Inlets= 1
Total(cms)= 0.2

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
TOTAL HYD.(ID= 1):	1.21	0.19	1.40	31.62
MAJOR SYS.(ID= 2):	0.05	0.02	1.40	31.62
MINOR SYS.(ID= 3):	1.16	0.17	1.40	31.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (0115) | Area (ha)= 17.98
ID= 1 DT=12.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	10.97	7.01
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=	85.49	27.73		
over (min)	12.00	12.00		
Storage Coeff. (min)=	1.07 (ii)	8.85 (ii)		
Unit Hyd. Tpeak (min)=	12.00	12.00		
Unit Hyd. peak (cms)=	0.14	0.11		
			TOTALS	
PEAK FLOW (cms)=	2.60	0.42	3.026 (iii)	
TIME TO PEAK (hrs)=	1.40	1.40	1.40	
RUNOFF VOLUME (mm)=	45.27	14.95	33.44	
TOTAL RAINFALL (mm)=	46.27	46.27	46.27	
RUNOFF COEFFICIENT =	0.98	0.32	0.72	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0114):	2.11	0.071	1.60	12.79
+ ID2= 2 (0115):	17.98	3.026	1.40	33.44
ID = 3 (0112):	20.09	3.087	1.40	31.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	20.09	3.087	1.40	31.28
+ ID2= 2 (0145):	0.05	0.022	1.40	31.62
ID = 1 (0112):	20.14	3.109	1.40	31.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0112):	20.14	3.109	1.40	31.28
+ ID2= 2 (0084):	10.64	1.961	1.40	36.17
ID = 3 (0112):	30.78	5.069	1.40	32.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0112):	30.78	5.069	1.40	32.97
+ ID2= 2 (0085):	8.54	1.498	1.40	34.66
ID = 1 (0112):	39.32	6.567	1.40	33.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0112)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

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*** W A R N I N G :  HYDROGRAPH 0089 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
         ID1= 1 (0112):    39.32   6.567     1.40    33.34
       + ID2= 2 (0089):     0.00   0.000     0.00     0.00
         ================================================
         ID = 3 (0112):    39.32   6.567     1.40    33.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0137) |   Area     (ha)=   1.33   Curve Number    (CN)= 74.0
|ID= 1 DT=12.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.13

     Unit Hyd Qpeak  (cms)=   0.391

     PEAK FLOW       (cms)=   0.060 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  10.559
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.228

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0096) |   Area     (ha)=   3.62
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.01         2.61
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
               over (min)       12.00        12.00
     Storage Coeff.  (min)=    1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.24         0.16        0.398 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40         1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95        23.44
     TOTAL RAINFALL   (mm)=     46.27        46.27        46.27
     RUNOFF COEFFICIENT   =      0.98         0.32         0.51

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0138) |   Area     (ha)=   1.45
|ID= 1 DT=12.0 min |   Total Imp(%)=  64.00   Dir. Conn.(%)=  64.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.93         0.52
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     30.00        20.00
     Mannings n          =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     85.49        27.73
               over (min)       12.00        12.00
     Storage Coeff.  (min)=    1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=     12.00        12.00
     Unit Hyd. peak  (cms)=      0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.22         0.03        0.252 (iii)
     TIME TO PEAK    (hrs)=      1.40         1.40         1.40
     RUNOFF VOLUME    (mm)=     45.27        14.95        34.35
     TOTAL RAINFALL   (mm)=     46.27        46.27        46.27
     RUNOFF COEFFICIENT   =      0.98         0.32         0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0136) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0137):     1.33   0.060     1.40    10.56
       + ID2= 2 (0138):     1.45   0.252     1.40    34.35
         ================================================
         ID = 3 (0136):     2.78   0.312     1.40    22.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0136) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0136):     2.78   0.312     1.40    22.97
       + ID2= 2 (0096):     3.62   0.398     1.40    23.44
         ================================================
         ID = 1 (0136):     6.40   0.710     1.40    23.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0117) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.3260      0.8017
                         0.0790     0.1850     |   0.3960      0.9004
                         0.2270     0.3947     |   0.0000      0.0000

                                    AREA     QPEAK     TPEAK      R.V.
                                     (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (0136)          6.400     0.710      1.40      23.24
     OUTFLOW: ID= 1 (0117)          6.400     0.046      2.90      23.14

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.53
                  TIME SHIFT OF PEAK FLOW          (min)= 90.00
                  MAXIMUM  STORAGE   USED        (ha.m.)=  0.1086

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| ROUTE PIPE (0116)|     PIPE Number      =   1.00
| IN= 2---> OUT= 1 |     Diameter     (mm)=1650.00
| DT=  5.0 min     |     Length        (m)= 850.00
--------------------     Slope       (m/m)=  0.005
                         Manning n         =  0.013

     <------------------ TRAVEL TIME TABLE ------------------->
       DEPTH       VOLUME     FLOW RATE      VELOCITY     TRAV.TIME
         (m)       (cu.m.)       (cms)         (m/s)          min
        0.09     .367E+02        0.0          0.80          17.68
        0.17     .102E+03        0.1          1.25          11.33
        0.26     .184E+03        0.3          1.61           8.81
        0.35     .278E+03        0.6          1.91           7.41
        0.43     .382E+03        1.0          2.18           6.51
        0.52     .492E+03        1.4          2.41           5.88
        0.61     .608E+03        1.9          2.61           5.43
        0.69     .727E+03        2.4          2.79           5.08
        0.78     .848E+03        2.9          2.95           4.81
        0.87     .970E+03        3.5          3.08           4.60
        0.96     .109E+04        4.1          3.20           4.43
        1.04     .121E+04        4.7          3.29           4.31
        1.13     .133E+04        5.2          3.36           4.22
        1.22     .144E+04        5.8          3.41           4.15
        1.30     .154E+04        6.2          3.44           4.12
        1.39     .163E+04        6.6          3.43           4.13
        1.48     .172E+04        6.9          3.40           4.17
        1.56     .178E+04        6.9          3.31           4.28
        1.65     .182E+04        6.5          3.02           4.70
                                      <---- hydrograph ---->   <-pipe / channel->
                                 AREA    QPEAK    TPEAK   R.V.   MAX DEPTH  MAX VEL
                                 (ha)     (cms)    (hrs)   (mm)       (m)      (m/s)
     INFLOW : ID= 2 (0117)      6.40     0.05      2.90  23.14       0.10      0.83
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     OUTFLOW: ID= 1 (0116)     6.40      0.05     3.20   23.14       0.10       0.83

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| ADD HYD    (0111) |
|   1 +  2 =  3     |          AREA     QPEAK     TPEAK      R.V.
--------------------           (ha)      (cms)     (hrs)      (mm)
          ID1= 1 (0112):     39.32    6.567      1.40     33.34
        + ID2= 2 (0116):      6.40    0.046      3.20     23.14
          ================================================
          ID = 3 (0111):     45.72    6.576      1.40     31.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR (0110) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |       OUTFLOW    STORAGE    |   OUTFLOW    STORAGE
--------------------         (cms)     (ha.m.)    |     (cms)     (ha.m.)
                           0.0000      0.0000     |    1.4644      1.1181
                           0.0392      0.1633     |    1.6231      1.3201
                           0.0901      0.4190     |    2.0261      1.9685
                           0.1513      0.6880     |    2.6873      2.1410
                           0.4982      0.8751     |    6.1638      2.4992
                           0.6461      0.9229     |    0.0000      0.0000

                                AREA      QPEAK      TPEAK       R.V.
                                (ha)      (cms)      (hrs)       (mm)
     INFLOW : ID= 2 (0111)     45.720      6.576      1.40       31.91
     OUTFLOW: ID= 1 (0110)     45.720      0.680      2.20       31.89

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 10.35
                TIME SHIFT OF PEAK FLOW         (min)= 48.00
                MAXIMUM  STORAGE   USED        (ha.m.)=  0.9318

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| DUHYD     (0144) |
| Inlet Cap.=2.026 |
| #of Inlets=    1 |
| Total(cms)=  2.0 |       AREA     QPEAK     TPEAK    R.V.
--------------------         (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   45.72      0.68      2.20    31.89
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   45.72      0.68      2.20    31.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0081) |   Area     (ha)=   1.34
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
--------------------

                                IMPERVIOUS     PERVIOUS (i)
     Surface Area      (ha)=        1.00          0.34
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       85.49         27.73
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.24          0.02          0.259 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40           1.40
     RUNOFF VOLUME    (mm)=       45.27         14.95          37.68
     TOTAL RAINFALL   (mm)=       46.27         46.27          46.27
     RUNOFF COEFFICIENT   =        0.98          0.32           0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0082) |   Area     (ha)=   2.51
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
--------------------

                                IMPERVIOUS     PERVIOUS (i)
     Surface Area      (ha)=        1.88          0.63
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       85.49         27.73
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.45          0.04          0.485 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40           1.40
     RUNOFF VOLUME    (mm)=       45.27         14.95          37.69
     TOTAL RAINFALL   (mm)=       46.27         46.27          46.27
     RUNOFF COEFFICIENT   =        0.98          0.32           0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0101) |   Area     (ha)=   0.47
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------

                                IMPERVIOUS     PERVIOUS (i)
     Surface Area      (ha)=        0.33          0.14
     Dep. Storage      (mm)=        1.00          1.50
     Average Slope      (%)=        2.00          2.00
     Length             (m)=       30.00         20.00
     Mannings n            =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       85.49         27.73
               over (min)         12.00         12.00
     Storage Coeff.  (min)=        1.07 (ii)     8.85 (ii)
     Unit Hyd. Tpeak (min)=       12.00         12.00
     Unit Hyd. peak  (cms)=        0.14          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.08          0.01          0.087 (iii)
     TIME TO PEAK    (hrs)=        1.40          1.40           1.40
     RUNOFF VOLUME    (mm)=       45.27         14.95          36.17
     TOTAL RAINFALL   (mm)=       46.27         46.27          46.27
     RUNOFF COEFFICIENT   =        0.98          0.32           0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD    (0088) |
|   1 +  2 =  3     |          AREA     QPEAK     TPEAK      R.V.
--------------------           (ha)      (cms)     (hrs)      (mm)
          ID1= 1 (0101):      0.47    0.087      1.40     36.17
        + ID2= 2 (0082):      2.51    0.485      1.40     37.69
          ================================================
          ID = 3 (0088):      2.98    0.571      1.40     37.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| DUHYD     (0093) |
| Inlet Cap.=0.934 |
| #of Inlets=    1 |
| Total(cms)=  0.9 |       AREA     QPEAK     TPEAK    R.V.
--------------------         (ha)      (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.98      0.57      1.40    37.45
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    ================================================
    MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
    MINOR SYS.(ID= 3):   2.98      0.57      1.40   37.45

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

CALIB					
STANDHYD (0094)	Area (ha)= 2.25				
ID= 1 DT=12.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 60.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.35	0.90	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		85.49	27.73	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.32	0.05	0.375 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	33.14
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0100)	Area (ha)= 1.27				
ID= 1 DT=12.0 min	Total Imp(%)= 68.00	Dir. Conn.(%)= 68.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.86	0.41	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		85.49	27.73	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.21	0.02	0.230 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	35.56
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

DUHYD (0092)					
Inlet Cap.=0.309					
#of Inlets= 1					
Total(cms)= 0.3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
TOTAL HYD.(ID= 1):		1.27	0.23	1.40	35.56
MAJOR SYS.(ID= 2):		0.00	0.00	0.00	0.00
MINOR SYS.(ID= 3):		1.27	0.23	1.40	35.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0102)	Area (ha)= 2.71				
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.68	2.03	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		85.49	27.73	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.16	0.12	0.283 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	22.53
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.49

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB					
STANDHYD (0103)	Area (ha)= 5.86				
ID= 1 DT=12.0 min	Total Imp(%)= 56.00	Dir. Conn.(%)= 56.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.28	2.58	
Dep. Storage	(mm)=	1.00	1.50	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	30.00	20.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		85.49	27.73	
over (min)		12.00	12.00	
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)	
Unit Hyd. Tpeak (min)=		12.00	12.00	
Unit Hyd. peak (cms)=		0.14	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.78	0.16	0.934 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	31.93
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0104)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0102):		2.71	0.283	1.40	22.53
+ ID2= 2 (0103):		5.86	0.934	1.40	31.93
ID = 3 (0104):		8.57	1.218	1.40	28.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0104)					
3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0104):		8.57	1.218	1.40	28.96

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        + ID2= 2 (0081):     1.34   0.259     1.40    37.68
          ================================================
          ID = 1 (0104):     9.91   1.476     1.40    30.14

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH 0092 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
*** W A R N I N G :  HYDROGRAPH 0003 = HYDROGRAPH 0001
          ID1= 1 (0104):     9.91   1.476     1.40    30.14
        + ID2= 2 (0092):     0.00   0.000     0.00     0.00
          ================================================
          ID = 3 (0104):     9.91   1.476     1.40    30.14

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD   (0104) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)      (mm)
          ID1= 3 (0104):     9.91   1.476     1.40    30.14
        + ID2= 2 (0093):     2.98   0.571     1.40    37.45
          ================================================
          ID = 1 (0104):    12.89   2.048     1.40    31.83

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD   (0104) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)      (mm)
          ID1= 1 (0104):    12.89   2.048     1.40    31.83
        + ID2= 2 (0094):     2.25   0.375     1.40    33.14
          ================================================
          ID = 3 (0104):    15.14   2.423     1.40    32.02

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD  (0083) |   Area    (ha)=   3.28
|ID= 1 DT=12.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.30         0.98
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.06          0.604 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          36.17
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.78

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB            |
| STANDHYD  (0091) |   Area    (ha)=   2.50
|ID= 1 DT=12.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  55.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.38         1.12
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.33         0.07          0.394 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          31.62
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| DUHYD     (0090) |
| Inlet Cap.=0.502 |
| #of Inlets=    1 |
| Total(cms)=  0.5 |          AREA     QPEAK     TPEAK     R.V.
--------------------           (ha)     (cms)     (hrs)      (mm)
     TOTAL HYD.(ID= 1):    2.50      0.39      1.40    31.62
     ================================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):    2.50      0.39      1.40    31.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD  (0109) |   Area    (ha)=  10.16
|ID= 1 DT=12.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  66.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.71         3.45
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.59         0.21          1.800 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          34.96
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------
| ADD HYD   (0107) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)      (mm)
          ID1= 1 (0109):    10.16   1.800     1.40    34.96
        + ID2= 2 (0083):     3.28   0.604     1.40    36.17
          ================================================
          ID = 3 (0107):    13.44   2.405     1.40    35.26
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0107):	13.44	2.405	1.40	35.26
	+ ID2= 2 (0089):	1.50	0.260	1.40	34.35
	ID = 1 (0107):	14.94	2.665	1.40	35.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0107):	14.94	2.665	1.40	35.16
	+ ID2= 2 (0090):	2.50	0.394	1.40	31.62
	ID = 3 (0107):	17.44	3.059	1.40	34.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0107)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0107):	17.44	3.059	1.40	34.66
	+ ID2= 2 (0092):	1.27	0.230	1.40	35.56
	ID = 1 (0107):	18.71	3.289	1.40	34.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0106)		OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1		(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min		0.0000	0.0000	0.7020	0.4508
		0.0190	0.0711	1.0110	0.9482
		0.0360	0.1863	1.0260	0.9798
		0.0460	0.2907	1.0950	1.1448
		0.5590	0.4269	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0107)	18.710	3.289	1.40	34.72
OUTFLOW: ID= 1 (0106)	18.710	0.526	1.80	34.67

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.99
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.4187

ROUTE PIPE (0105)		
IN= 2---> OUT= 1	Pipe Number	= 1.00
DT= 5.0 min	Diameter	(mm)=1650.00
	Length	(m)= 467.00
	Slope	(m/m)= 0.006
	Manning n	= 0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.201E+02	0.0	0.88	8.87
0.17	.560E+02	0.2	1.37	5.68
0.26	.101E+03	0.4	1.76	4.42
0.35	.153E+03	0.7	2.09	3.72
0.43	.210E+03	1.1	2.38	3.27
0.52	.270E+03	1.5	2.64	2.95
0.61	.334E+03	2.0	2.86	2.72
0.69	.399E+03	2.6	3.06	2.55
0.78	.466E+03	3.2	3.23	2.41
0.87	.533E+03	3.9	3.38	2.31
0.96	.599E+03	4.5	3.50	2.22
1.04	.665E+03	5.1	3.60	2.16
1.13	.728E+03	5.7	3.68	2.11
1.22	.789E+03	6.3	3.74	2.08
1.30	.846E+03	6.8	3.76	2.07
1.39	.897E+03	7.2	3.76	2.07
1.48	.943E+03	7.5	3.72	2.09
1.56	.978E+03	7.6	3.63	2.15
1.65	.999E+03	7.1	3.30	2.36

		<---- hydrograph ---->			<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0106)	18.71	0.53	1.80	34.67	0.30	1.91
OUTFLOW: ID= 1 (0105)	18.71	0.53	1.90	34.67	0.30	1.90

ADD HYD (0099)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0104):	15.14	2.423	1.40	32.02
	+ ID2= 2 (0105):	18.71	0.527	1.90	34.67
	ID = 3 (0099):	33.85	2.452	1.40	33.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0099)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
*** W A R N I N G : HYDROGRAPH 0144 <ID= 2> IS DRY.					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
*** W A R N I N G : HYDROGRAPH 0001 = HYDROGRAPH 0003					
	ID1= 3 (0099):	33.85	2.452	1.40	33.48
	+ ID2= 2 (0144):	0.00	0.000	0.00	0.00
	ID = 1 (0099):	33.85	2.452	1.40	33.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0098)		OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1		(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min		0.0000	0.0000	0.7390	1.4514
		0.0190	0.0906	0.8290	1.8600
		0.0770	0.2799	1.1240	1.9075
		0.2960	0.3787	5.4930	2.2479
		0.3520	0.4123	13.3920	2.4903

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0099)	33.850	2.452	1.40	33.48
OUTFLOW: ID= 1 (0098)	33.850	0.383	3.20	33.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.62
TIME SHIFT OF PEAK FLOW (min)=108.00
MAXIMUM STORAGE USED (ha.m.)= 0.4958

CALIB					
NASHYD (0123)		Area	(ha)=	1.61	Curve Number (CN)= 74.0
ID= 1 DT=12.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.13	

Unit Hyd Qpeak (cms)= 0.473

PEAK FLOW (cms)= 0.073 (i)
TIME TO PEAK (hrs)= 1.400
RUNOFF VOLUME (mm)= 10.559
TOTAL RAINFALL (mm)= 46.267
RUNOFF COEFFICIENT = 0.228

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0124)		Area	(ha)=	2.59	Curve Number (CN)= 74.0
ID= 1 DT=12.0 min		Ia	(mm)=	5.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)=		0.22	

```
     Unit Hyd Qpeak  (cms)=   0.450

     PEAK FLOW       (cms)=   0.090 (i)
     TIME TO PEAK    (hrs)=   1.400
     RUNOFF VOLUME    (mm)=  12.586
     TOTAL RAINFALL   (mm)=  46.267
     RUNOFF COEFFICIENT   =   0.272

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD  (0086) |   Area     (ha)=  10.18
|ID= 1 DT=12.0 min |   Total Imp(%)=  75.00   Dir. Conn.(%)=  75.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       7.63         2.55
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.81         0.15          1.966 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          37.69
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0087) |   Area     (ha)=   2.21
|ID= 1 DT=12.0 min |   Total Imp(%)=  85.00   Dir. Conn.(%)=  85.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.88         0.33
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.45         0.02          0.466 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          40.72
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0097) |   Area     (ha)=   0.85
|ID= 1 DT=12.0 min |   Total Imp(%)=  28.00   Dir. Conn.(%)=  28.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.24         0.61
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.04          0.093 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          23.44
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.51

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0125) |   Area     (ha)=   6.71
|ID= 1 DT=12.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.37         1.34
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      30.00        20.00
     Mannings n          =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      85.49        27.73
               over (min)        12.00        12.00
     Storage Coeff.  (min)=       1.07 (ii)    8.85 (ii)
     Unit Hyd. Tpeak (min)=      12.00        12.00
     Unit Hyd. peak  (cms)=       0.14         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.27         0.08          1.355 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.40           1.40
     RUNOFF VOLUME    (mm)=      45.27        14.95          39.20
     TOTAL RAINFALL   (mm)=      46.27        46.27          46.27
     RUNOFF COEFFICIENT   =       0.98         0.32           0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0122) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 1 (0123):     1.61   0.073     1.40     10.56
       + ID2= 2 (0124):     2.59   0.090     1.40     12.59
         ==========================================
         ID = 3 (0122):     4.20   0.164     1.40     11.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0122) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
         ID1= 3 (0122):     4.20   0.164     1.40     11.81
       + ID2= 2 (0125):     6.71   1.355     1.40     39.20
         ==========================================
         ID = 1 (0122):    10.91   1.519     1.40     28.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0122)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0122):	10.91	1.519	1.40	28.66
+	ID2= 2 (0086):	10.18	1.966	1.40	37.69
	ID = 3 (0122):	21.09	3.485	1.40	33.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0122):	21.09	3.485	1.40	33.02
+	ID2= 2 (0087):	2.21	0.466	1.40	40.72
	ID = 1 (0122):	23.30	3.951	1.40	33.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0122)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0122):	23.30	3.951	1.40	33.75
+	ID2= 2 (0097):	0.85	0.093	1.40	23.44
	ID = 3 (0122):	24.15	4.045	1.40	33.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0131)	Area (ha)= 6.53	Curve Number (CN)= 74.0			
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.19				

Unit Hyd Qpeak (cms)= 1.313

PEAK FLOW	(cms)=	0.260 (i)
TIME TO PEAK	(hrs)=	1.400
RUNOFF VOLUME	(mm)=	12.283
TOTAL RAINFALL	(mm)=	46.267
RUNOFF COEFFICIENT	=	0.265

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
STANDHYD (0128)	Area (ha)= 2.34			
ID= 1 DT=12.0 min	Total Imp(%)= 55.00	Dir. Conn.(%)= 55.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.29	1.05
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		85.49	27.73
over (min)		12.00	12.00
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.31	0.06	0.369 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	31.62
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB				
STANDHYD (0130)	Area (ha)= 0.97			
ID= 1 DT=12.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 64.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.62	0.35
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		85.49	27.73
over (min)		12.00	12.00
Storage Coeff. (min)=		1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)=		12.00	12.00
Unit Hyd. peak (cms)=		0.14	0.11

				TOTALS
PEAK FLOW	(cms)=	0.15	0.02	0.168 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40	1.40
RUNOFF VOLUME	(mm)=	45.27	14.95	34.35
TOTAL RAINFALL	(mm)=	46.27	46.27	46.27
RUNOFF COEFFICIENT	=	0.98	0.32	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0129)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0128):	2.34	0.369	1.40	31.62
+	ID2= 2 (0130):	0.97	0.168	1.40	34.35
	ID = 3 (0129):	3.31	0.537	1.40	32.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0129)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0129):	3.31	0.537	1.40	32.42
+	ID2= 2 (0131):	6.53	0.260	1.40	12.28
	ID = 1 (0129):	9.84	0.798	1.40	19.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0134)	Area (ha)= 0.91	Curve Number (CN)= 74.0		
ID= 1 DT=12.0 min	Ia (mm)= 5.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.17			

Unit Hyd Qpeak (cms)= 0.204

PEAK FLOW	(cms)=	0.039 (i)
TIME TO PEAK	(hrs)=	1.400
RUNOFF VOLUME	(mm)=	11.943
TOTAL RAINFALL	(mm)=	46.267
RUNOFF COEFFICIENT	=	0.258

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
STANDHYD (0095)	Area (ha)= 2.95			
ID= 1 DT=12.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.74	2.21
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00

Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	85.49	27.73
over (min)		12.00	12.00
Storage Coeff. (min)	=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)	=	12.00	12.00
Unit Hyd. peak (cms)	=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.18	0.13 0.308 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	45.27	14.95 22.53
TOTAL RAINFALL	(mm)=	46.27	46.27 46.27
RUNOFF COEFFICIENT	=	0.98	0.32 0.49

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0133) ID= 1 DT=12.0 min | Area (ha)= 6.86 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.18	2.68
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	85.49	27.73
over (min)		12.00	12.00
Storage Coeff. (min)	=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)	=	12.00	12.00
Unit Hyd. peak (cms)	=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.99	0.16 1.155 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	45.27	14.95 33.44
TOTAL RAINFALL	(mm)=	46.27	46.27 46.27
RUNOFF COEFFICIENT	=	0.98	0.32 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 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.

CALIB STANDHYD (0135) ID= 1 DT=12.0 min | Area (ha)= 3.87 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.36	1.51
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	30.00	20.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	85.49	27.73
over (min)		12.00	12.00
Storage Coeff. (min)	=	1.07 (ii)	8.85 (ii)
Unit Hyd. Tpeak (min)	=	12.00	12.00
Unit Hyd. peak (cms)	=	0.14	0.11
			TOTALS
PEAK FLOW	(cms)=	0.56	0.09 0.651 (iii)
TIME TO PEAK	(hrs)=	1.40	1.40 1.40
RUNOFF VOLUME	(mm)=	45.27	14.95 33.44
TOTAL RAINFALL	(mm)=	46.27	46.27 46.27
RUNOFF COEFFICIENT	=	0.98	0.32 0.72

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 74.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0132) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0133):	6.86	1.155	1.40	33.44
+ ID2= 2 (0134):	0.91	0.039	1.40	11.94
ID = 3 (0132):	7.77	1.194	1.40	30.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0132):	7.77	1.194	1.40	30.93
+ ID2= 2 (0135):	3.87	0.651	1.40	33.44
ID = 1 (0132):	11.64	1.845	1.40	31.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0132) 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0132):	11.64	1.845	1.40	31.76
+ ID2= 2 (0095):	2.95	0.308	1.40	22.53
ID = 3 (0132):	14.59	2.153	1.40	29.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0127) IN= 2---> OUT= 1 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4563
0.1220	0.1110	0.8770	0.7650
0.3620	0.2096	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0132)	14.590	2.153	1.40	29.90
OUTFLOW: ID= 1 (0127)	14.590	0.404	1.80	29.88

PEAK FLOW REDUCTION [Qout/Qin](%)= 18.78
TIME SHIFT OF PEAK FLOW (min)= 24.00
MAXIMUM STORAGE USED (ha.m.)= 0.2459

ROUTE PIPE (0119) IN= 2---> OUT= 1 DT= 5.0 min

PIPE Number	=	1.00
Diameter	(mm)=	1650.00
Length	(m)=	500.00
Slope	(m/m)=	0.005
Manning n	=	0.013

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME min
0.09	.216E+02	0.0	0.80	10.40
0.17	.600E+02	0.1	1.25	6.67
0.26	.108E+03	0.3	1.61	5.18
0.35	.164E+03	0.6	1.91	4.36
0.43	.225E+03	1.0	2.18	3.83
0.52	.290E+03	1.4	2.41	3.46
0.61	.358E+03	1.9	2.61	3.19
0.69	.428E+03	2.4	2.79	2.99
0.78	.499E+03	2.9	2.95	2.83
0.87	.570E+03	3.5	3.08	2.70
0.96	.642E+03	4.1	3.20	2.61
1.04	.712E+03	4.7	3.29	2.53
1.13	.780E+03	5.2	3.36	2.48
1.22	.844E+03	5.8	3.41	2.44

1.30	.905E+03	6.2	3.44	2.43
1.39	.961E+03	6.6	3.43	2.43
1.48	.101E+04	6.9	3.40	2.45
1.56	.105E+04	6.9	3.31	2.52
1.65	.107E+04	6.5	3.02	2.76

		<---- hydrograph ---->			<-pipe / channel->	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW :	ID= 2 (0127)	14.59	0.40	1.80	29.88	0.28	1.66
OUTFLOW:	ID= 1 (0119)	14.59	0.40	1.90	29.88	0.28	1.66

ADD HYD (0118)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1	(0119):	14.59	0.404	1.90	29.88
+ ID2= 2	(0129):	9.84	0.798	1.40	19.06
ID = 3	(0118):	24.43	0.926	1.40	25.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0126)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6510	0.4564
0.1220	0.0863	0.8770	0.7894
0.3620	0.1603	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0118)	24.430	0.926	1.40	25.52
OUTFLOW:	ID= 1 (0126)	24.430	0.388	2.80	25.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 41.85
TIME SHIFT OF PEAK FLOW (min)= 84.00
MAXIMUM STORAGE USED (ha.m.)= 0.1866

ADD HYD (0121)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1	(0122):	24.15	4.045	1.40	33.38
+ ID2= 2	(0126):	24.43	0.388	2.80	25.51
ID = 3	(0121):	48.58	4.125	1.40	29.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR (0120)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4220	0.9546
0.0430	0.1534	0.6790	1.3320
0.0850	0.4277	0.9700	1.6432
0.2830	0.6181	3.4180	1.8082
0.3470	0.6580	15.8020	2.2183

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0121)	48.580	4.125	1.40	29.43
OUTFLOW:	ID= 1 (0120)	48.580	0.386	4.10	29.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.36
TIME SHIFT OF PEAK FLOW (min)=162.00
MAXIMUM STORAGE USED (ha.m.)= 0.8136

FINISH

APPENDIX H
Proposed Pond Quality Controls

COLE ENGINEERING

Quality Pond Sizing:
Pond 4 - Post

Glenway Estates
File No. L09-301
Date: July 26, 2013

Quality Pond Sizing

	Drainage Area			
$A_{to\text{-}pond}$ =	48.58	ha	Percent Impervious	54.0%
$V_{permanent\ pool}$ =	7165	m^3	Percent Pervious	46.0%
$V_{extended\ detention}$ =	1943	m^3		

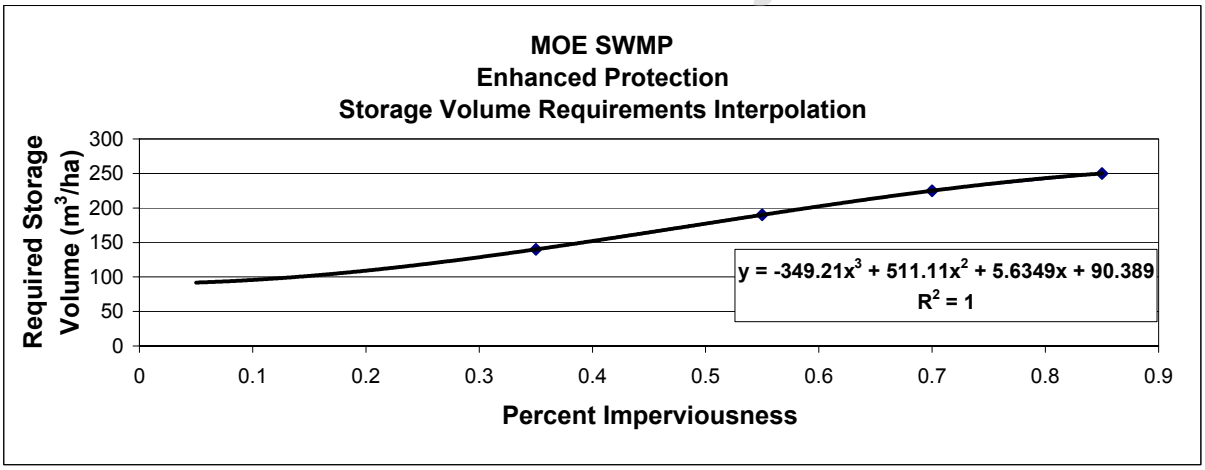
Storage Volume:	V =	187	m^3 / ha
Extended Detention:	V =	40	m^3 / ha
Permanent Pool:	V =	147	m^3 / ha

therefore, provide extended detention storage of 1943 m^3
and permanent pool volume of 7165 m^3

MOE 2003 SWMP Manual: Water Quality Storage Requirements based on Receiving Waters *

PROTECTION LEVEL	SWMP Type	STORAGE VOLUME (m^3 / ha) FOR IMPERVIOUS LEVEL				
		35%	55%	70%	54.0%	85%
Enhanced	Wet Pond	140	190	225	**187**	250
Normal	Wet Pond	90	110	130		150
Basic	Wet Pond	60	75	85		95

* Table 3.2 from the MOE SWMP Planning & Design Manual, 2004, pg 3-10



COLE ENGINEERING

Stage - Storage Calculations
Pond 4 Permanent Pool
Town of Newmarket
L10-523
Date: July 26, 2013

Input Data

	Depth	Area
1	0.00	1086
2	0.50	1630
3	2.00	4043
4	2.50	5794

Output Volume

		Elevation
		267.20
	633.7	267.70
	4285.2	269.20
	6598.5	269.70

SEGMENT VOLUME

679	633.6667	633.67
4254.75	3651.5	4285.17
2459.25	2313.333	6598.50

CHECKING

ELEV	h	Vcalc'd
262.60	0.000	0
264.10	1.500	2622
264.60	2.000	4285
265.10	2.500	6599

Matrix Calculation

1	1	0	1267	
2	4	8	4285	
3	6	16	6599	
1	1	0	1267	
0	-3	-8	-1751	
0	-5	-15	-3430	
1	1	0	1267	
0	-3	-8	-1751	
0	0	-8	-1538	
1	1	0	1267	
0	1	3	584	
0	0	1	205	
1	1	0	1216	
0	1	0	71	
0	0	1	205	
1	0	0	**1180.7**	**=a**
0	1	0	**70.8**	**=b**
0	0	1	**205.1**	**=c**

Depth (m)	Elevation (m)	Volume (m^3)
0.00	267.20	0.0
0.10	267.30	119.0
0.20	267.40	240.6
0.30	267.50	366.1
0.40	267.60	496.7
0.50	267.70	633.7
0.60	267.80	778.2
0.70	267.90	931.5
0.80	268.00	1094.8
0.90	268.10	1269.5
1.00	268.20	1456.6
1.10	268.30	1657.4
1.20	268.40	1873.1
1.30	268.50	2105.1
1.40	268.60	2354.4
1.50	268.70	2622.5
1.60	268.80	2910.3
1.70	268.90	3219.3
1.80	269.00	3550.6
1.90	269.10	3905.5
2.00	269.20	4285.2
2.10	269.30	4690.9
2.20	269.40	5123.8
2.30	269.50	5585.2
2.40	269.60	6076.4
2.50	269.70	6598.5

COLE ENGINEERING

Forebay Sizing
Pond 4-A (West) Forebay
Town of Newmarket
L09-301
Date: July 26, 2013

Forebay Sizing

Settling Calculations

Proposed Forebay Length	**50**	**m**	water line
Proposed Forebay Width	**10**	**m**	bottom width

$$Dist = \sqrt{\frac{rQ_P}{V_S}}$$

Eq. 4.5 MOE SWM Planning and Design Manual, 2003

Water Quality Design Flow Rate from Pond (Q_p)	0.10	m^3/s	(25 mm, 4 Hour Chicago)
Length to Width Ratio of Forebay (r)	5.0	:1	
Settling Velocity (V_s)	0.0003	m/s	
Minimum Forebay Length for Settling	**40.6**	**m**	
Settling Velocity Achieved in Forebay	**0.00020**	**m/s**	

The 50 m long forebay exceeds the minimum 40.6 m settling length and achieves a settling velocity of 0.0002 m/s, which is less than the maximum settling velocity of 0.0003 m/s in a proposed forebay.

Dispersion Length Calculations

$$Dist = \frac{8Q}{dV_F}$$

Eq. 4.6 MOE SWM Planning and Design Manual, 2003

Inlet Flowrate (Q)	2.90	m^3/s	(75% of 5-yr, 4 hr CHI)
Permanent Pool Depth in Forebay	2.5	m	
Desired velocity of fluid jet in forebay (V_f)	0.5	m/s	
Minimum Dispersion Length	**18.5**	**m**	
Minimum Bottom Width	**2.3**	**m**	

The proposed forebay meets all minimum size requirements for achieving desired velocities.

Achieved velocity of 5 yr inlet flow in forebay	**0.2**	**m/s**

The proposed forebay has a 5 year inlet velocity of 0.3 m/s, therefore it is less than the desired maximum velocity of 0.5 m/s in a proposed forebay.

COLE ENGINEERING

Forebay Sizing
Pond 4-B (East) Forebay
Town of Newmarket
L09-301
Date: July 26, 2013

Forebay Sizing

Settling Calculations

Proposed Forebay Length	**56 m**	water line
Proposed Forebay Width	**15 m**	bottom width

$$Dist = \sqrt{\frac{rQ_P}{V_S}}$$

Eq. 4.5 MOE SWM Planning and Design Manual, 2003

Water Quality Design Flow Rate from Pond (Q_p)	0.10 m^3/s	(25 mm, 4 Hour Chicago)
Length to Width Ratio of Forebay (r)	3.7 :1	
Settling Velocity (V_s)	0.0003 m/s	
Minimum Forebay Length for Settling	**35.1 m**	
Settling Velocity Achieved in Forebay	**0.00012 m/s**	

The 56 m long forebay exceeds the minimum 35.1 m settling length and achieves a settling velocity of 0.00012 m/s, which is less than the minimum settling velocity of 0.0003 m/s in a proposed forebay.

Dispersion Length Calculations

$$Dist = \frac{8Q}{dV_F}$$

Eq. 4.6 MOE SWM Planning and Design Manual, 2003

Inlet Flowrate (Q)	0.97 m^3/s	(5 Year, 24 Hour SCS)
Permanent Pool Depth in Forebay	2.5 m	
Desired velocity of fluid jet in forebay (V_f)	0.5 m/s	
Minimum Dispersion Length	**6.2 m**	
Minimum Bottom Width	**0.8 m**	

The proposed forebay meets all minimum size requirements for achieving desired velocities.

Achieved velocity of 5 yr inlet flow in forebay **0.1 m/s**

The proposed forebay has a 5 year inlet velocity of 0.1 m/s, therefore it is less than the desired maximum velocity of 0.5 m/s in a proposed forebay.

Pond 4 - 25 m Spillway

Project Description

Solve For	Headwater Elevation

Input Data

Discharge		4.86	m³/s
Crest Elevation		0.00	m
Tailwater Elevation		0.00	m
Crest Surface Type	Paved		
Crest Breadth		8.00	m
Crest Length		25.00	m

Results

Headwater Elevation	0.24	m
Headwater Height Above Crest	0.24	m
Tailwater Height Above Crest	0.00	m
Weir Coefficient	1.67	SI
Submergence Factor	1.00	
Adjusted Weir Coefficient	1.67	SI
Flow Area	5.95	m²
Velocity	0.82	m/s
Wetted Perimeter	25.48	m
Top Width	25.00	m

Pond 4 - 25 m Spillway Cross-Section

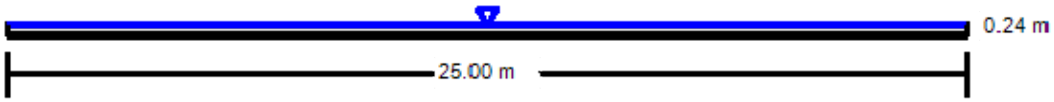
Project Description

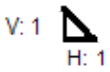
Solve For	Headwater Elevation

Input Data

Discharge		4.86	m³/s
Headwater Elevation		0.24	m
Crest Elevation		0.00	m
Tailwater Elevation		0.00	m
Crest Surface Type	Paved		
Crest Breadth		8.00	m
Crest Length		25.00	m

Cross Section Image





COLE ENGINEERING

Quality Pond Sizing:
Pond 6 - Post

Glenway Estates
File No. L09-301
Date: July 26, 2013

Quality Pond Sizing

	Drainage Area			
$A_{to\text{-}pond}$ =	39.27	ha	Percent Impervious	65.0%
$V_{permanent\ pool}$ =	6837	m^3	Percent Pervious	35.0%
$V_{extended\ detention}$ =	1571	m^3		

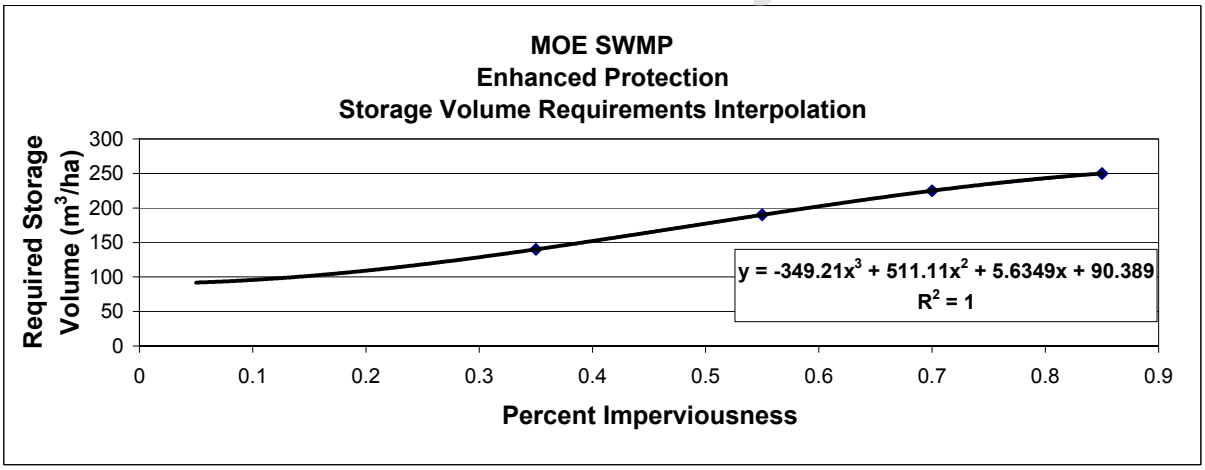
Storage Volume:	V =	214	m^3 / ha
Extended Detention:	V =	40	m^3 / ha
Permanent Pool:	V =	174	m^3 / ha

therefore, provide extended detention storage of 1571 m^3
and permanent pool volume of 6837 m^3

MOE 2003 SWMP Manual: Water Quality Storage Requirements based on Receiving Waters *

PROTECTION LEVEL	SWMP Type	STORAGE VOLUME (m^3 / ha) FOR IMPERVIOUS LEVEL				
		35%	55%	65.0%	70%	85%
Enhanced	Wet Pond	140	190	**214**	225	250
Normal	Wet Pond	90	110		130	150
Basic	Wet Pond	60	75		85	95

* Table 3.2 from the MOE SWMP Planning & Design Manual, 2004, pg 3-10



COLE ENGINEERING

Stage - Storage Calculations
Pond 6 Permanent Pool
Town of Newmarket
L10-523
Date: July 26, 2013

Input Data **Output Volume** **Matrix Calculation**

	Depth	Area		Elevation
1	0.00	2631		262.25
2	0.50	3189	1408.5	264.15
3	1.40	6750	5346.9	264.45
4	2.00	8020	9650.9	264.75

SEGMENT VOLUME

1455	1408.5	1408.50
4472.55	3938.4	5346.90
4431	4304	9650.90

CHECKING

ELEV	h	Vcalc'd
262.60	0.000	0
264.10	1.500	5952
264.60	2.000	9651
264.60	2.000	9651

1	1	0	2817	
1	2	3	5347	
2	4	8	9651	
1	1	0	2817	
0	-1	-2	-1403	
0	-3	-8	-4017	
1	1	0	2817	
0	-1	-2	-1403	
0	0	-2	-852	
1	1	0	2817	
0	1	2	1114	
0	0	1	376	
1	1	0	2723	
0	1	0	400	
0	0	1	376	
1	0	0	**2523.2**	**=a**
0	1	0	**399.8**	**=b**
0	0	1	**375.7**	**=c**

Depth (m)	Elevation (m)	Volume (m^3)
0.00	262.25	0.0
0.10	262.35	256.7
0.20	262.45	523.6
0.30	262.55	803.1
0.40	262.65	1097.3
0.50	262.75	1408.5
0.60	262.85	1739.0
0.70	262.95	2091.0
0.80	263.05	2466.8
0.90	263.15	2868.6
1.00	263.25	3298.7
1.10	263.35	3759.3
1.20	263.45	4252.7
1.30	263.55	4781.1
1.40	263.65	5346.9
1.50	263.75	5952.2
1.60	263.85	6599.3
1.70	263.95	7290.5
1.80	264.05	8028.0
1.90	264.15	8814.0
2.00	264.25	9650.9

Forebay Sizing
Pond 6 Forebay
Town of Newmarket
L09-301
Date: July 26, 2013

Forebay Sizing

Settling Calculations

Proposed Forebay Length	**56**	**m**	water line
Proposed Forebay Width	**20**	**m**	bottom width

$$Dist = \sqrt{\frac{rQ_P}{V_S}}$$

Eq. 4.5 MOE SWM Planning and Design Manual, 2003

Water Quality Design Flow Rate from Pond (Q_p)	0.12	m^3/s	(25 mm, 4 Hour Chicago)
Length to Width Ratio of Forebay (r)	2.8	:1	
Settling Velocity (V_s)	0.00030	m/s	
Minimum Forebay Length for Settling	**33.5**	**m**	
Settling Velocity Achieved in Forebay	**0.00011**	**m/s**	

The 56 m long forebay exceeds the minimum 33.5 m settling length and achieves a settling velocity of 0.00011 m/s, which is less than the maximum settling velocity of 0.0003 m/s in a proposed forebay.

Dispersion Length Calculations

$$Dist = \frac{8Q}{dV_F}$$

Eq. 4.6 MOE SWM Planning and Design Manual, 2003

Inlet Flowrate (Q)	6.58	m^3/s	(5 Year, 4 Hour CHI)
Permanent Pool Depth in Forebay	2.5	m	
Desired velocity of fluid jet in forebay (V_f)	0.5	m/s	
Minimum Dispersion Length	**42.1**	**m**	
Minimum Bottom Width	**5.3**	**m**	

The proposed forebay meets all minimum size requirements for achieving desired velocities.

Achieved velocity of 5 yr inlet fluid jet in forebay	**0.4**	**m/s**

The proposed forebay has a 5 year inlet fluid jet velocity of 0.4 m/s, which is less than the desired maximum velocity of 0.5 m/s in a proposed forebay.

Pond 6 - 25 m Spillway

Project Description

Solve For	Headwater Elevation

Input Data

Discharge		4.57	m³/s
Crest Elevation		0.00	m
Tailwater Elevation		0.00	m
Crest Surface Type	Paved		
Crest Breadth		8.00	m
Crest Length		25.00	m

Results

Headwater Elevation	0.23	m
Headwater Height Above Crest	0.23	m
Tailwater Height Above Crest	0.00	m
Weir Coefficient	1.67	SI
Submergence Factor	1.00	
Adjusted Weir Coefficient	1.67	SI
Flow Area	5.72	m²
Velocity	0.80	m/s
Wetted Perimeter	25.46	m
Top Width	25.00	m

Pond 6 - 25 m Spillway Cross-section

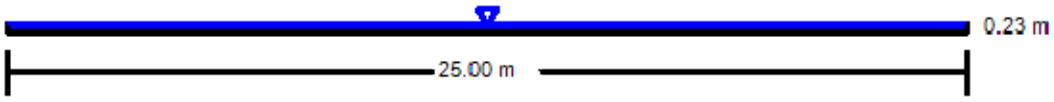
Project Description

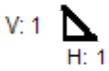
Solve For	Headwater Elevation

Input Data

Discharge		4.57	m³/s
Headwater Elevation		0.23	m
Crest Elevation		0.00	m
Tailwater Elevation		0.00	m
Crest Surface Type	Paved		
Crest Breadth		8.00	m
Crest Length		25.00	m

Cross Section Image





COLE ENGINEERING

Quality Pond Sizing
Pond 8 - Post Development

Glenway Estates
File No. L09-301
Date: July 26, 2013

Quality Pond Sizing

	Drainage Area			
$A_{to\text{-}pond}$ =	18.71	ha	Percent Impervious	65.0%
$V_{permanent\ pool}$ =	3257	m^3	Percent Pervious	35.0%
$V_{extended\ detention}$ =	748	m^3		

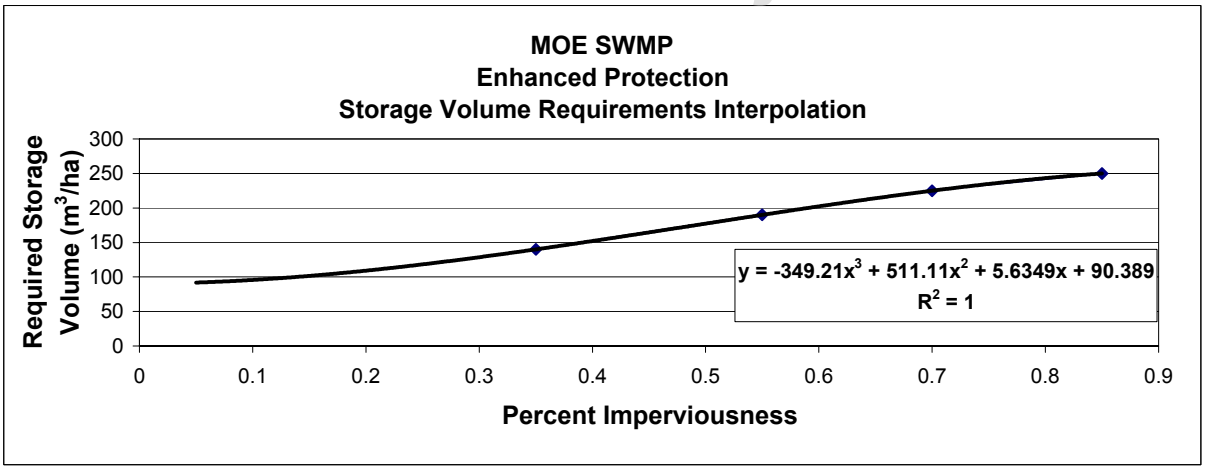
Storage Volume:	V =	214	m^3 / ha
Extended Detention:	V =	40	m^3 / ha
Permanent Pool:	V =	174	m^3 / ha

therefore, provide extended detention storage of 748 m^3
and permanent pool volume of 3257 m^3

MOE 2003 SWMP Manual: Water Quality Storage Requirements based on Receiving Waters *

PROTECTION LEVEL	SWMP Type	STORAGE VOLUME (m^3 / ha) FOR IMPERVIOUS LEVEL				
		35%	55%	65.0%	70%	85%
Enhanced	Wet Pond	140	190	**214**	225	250
Normal	Wet Pond	90	110		130	150
Basic	Wet Pond	60	75		85	95

* Table 3.2 from the MOE SWMP Planning & Design Manual, 2004, pg 3-10



COLE ENGINEERING

Stage - Storage Calculations
Pond 8 Permanent Pool
Town of Newmarket
L10-523
Date: July 26, 2013

Input Data **Output Volume**

	Depth	Area		Elevation
1	0.00	580		267.40
2	0.50	923	347.2	267.90
3	2.00	2322	2431.2	269.40
4	2.50	3383	3769.0	269.90

SEGMENT VOLUME

375.75	347.1667	347.17
2433.75	2084	2431.17
1426.25	1337.833	3769.00

CHECKING

ELEV	h	Vcalc'd
262.60	0.000	0
264.10	1.500	1474
264.60	2.000	2431
265.10	2.500	3769

Matrix Calculation

1	1	0	694	
2	4	8	2431	
3	6	16	3769	
1	1	0	694	
0	-3	-8	-1043	
0	-5	-15	-2033	
1	1	0	694	
0	-3	-8	-1043	
0	0	-8	-887	
1	1	0	694	
0	1	3	348	
0	0	1	118	
1	1	0	665	
0	1	0	52	
0	0	1	118	
1	0	0	**638.9**	**=a**
0	1	0	**51.8**	**=b**
0	0	1	**118.3**	**=c**

Depth (m)	Elevation (m)	Volume (m^3)
0.00	267.40	0.0
0.10	267.50	64.5
0.20	267.60	130.8
0.30	267.70	199.5
0.40	267.80	271.4
0.50	267.90	347.2
0.60	268.00	427.5
0.70	268.10	513.2
0.80	268.20	604.8
0.90	268.30	703.2
1.00	268.40	809.0
1.10	268.50	922.9
1.20	268.60	1045.6
1.30	268.70	1177.9
1.40	268.80	1320.5
1.50	268.90	1474.1
1.60	269.00	1639.3
1.70	269.10	1816.9
1.80	269.20	2007.6
1.90	269.30	2212.1
2.00	269.40	2431.2
2.10	269.50	2665.4
2.20	269.60	2915.6
2.30	269.70	3182.5
2.40	269.80	3466.7
2.50	269.90	3769.0

Forebay Sizing
Pond 8 Forebay
Town of Newmarket
L09-301
Date: July 26, 2013

Forebay Sizing

Settling Calculations

Proposed Forebay Length	**45**	**m**	water line
Proposed Forebay Width	**11**	**m**	bottom width

$$Dist = \sqrt{\frac{rQ_P}{V_S}}$$

Eq. 4.5 MOE SWM Planning and Design Manual, 2003

Water Quality Design Flow Rate from Pond (Q_p)	0.07	m^3/s	(25 mm, 4 Hour Chicago)
Length to Width Ratio of Forebay (r)	4.1	:1	
Settling Velocity (V_s)	0.0003	m/s	
Minimum Forebay Length for Settling	**30.0**	**m**	
Settling Velocity Achieved in Forebay	**0.00013**	**m/s**	

The 45 m long forebay exceeds the minimum 30 m settling length and achieves a settling velocity of 0.00013 m/s, which is less than the minimum settling velocity of 0.0003 m/s in a proposed forebay.

Dispersion Length Calculations

$$Dist = \frac{8Q}{dV_F}$$

Eq. 4.6 MOE SWM Planning and Design Manual, 2003

Inlet Flowrate (Q)	3.29	m^3/s	(5 Year, 4 Hour CHI)
Permanent Pool Depth in Forebay	2.5	m	
Desired velocity of fluid jet in forebay (V_f)	0.5	m/s	
Minimum Dispersion Length	**21.0**	**m**	
Minimum Bottom Width	**2.6**	**m**	

The proposed forebay meets all minimum size requirements for achieving desired velocities.

Achieved velocity of 5 yr inlet fluid jet in forebay	**0.2**	**m/s**

The proposed forebay has a 5 year fluid jet inlet velocity of 0.2 m/s, therefore it is less than the desired maximum velocity of 0.5 m/s in the proposed forebay.

COLE ENGINEERING

Quality Pond Sizing:
Pond 9 - Post

Glenway Estates
File No. L09-301
Date: July 26, 2013

Quality Pond Sizing

	Drainage Area			
$A_{to\text{-}pond}$ =	15.14	ha	Percent Impervious	70.0%
$V_{permanent\ pool}$ =	2801	m^3	Percent Pervious	30.0%
$V_{extended\ detention}$ =	606	m^3		

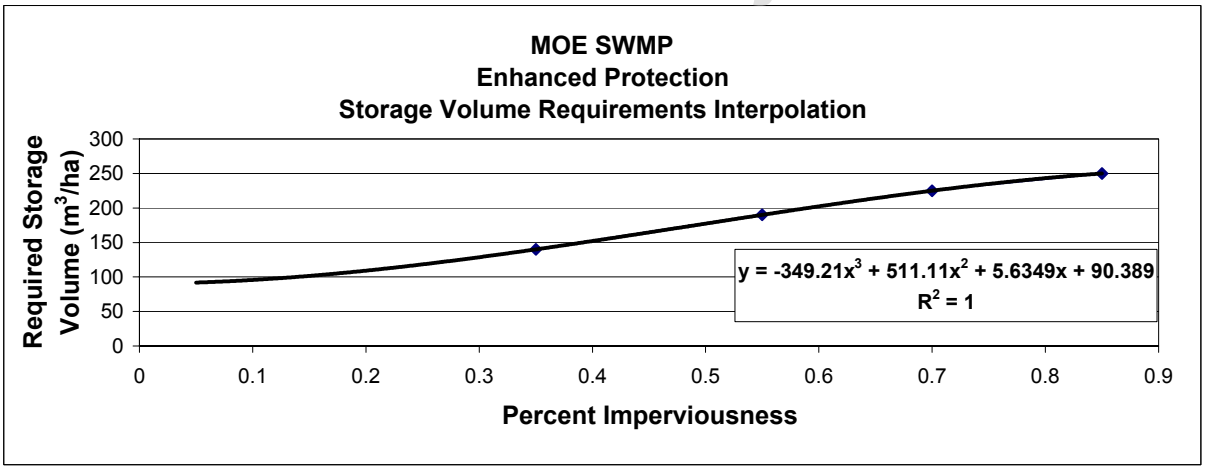
Storage Volume:	V =	225	m^3/ ha
Extended Detention:	V =	40	m^3/ ha
Permanent Pool:	V =	185	m^3/ ha

therefore, provide extended detention storage of 606 m^3
and permanent pool volume of 2801 m^3

MOE 2003 SWMP Manual: Water Quality Storage Requirements based on Receiving Waters *

PROTECTION LEVEL	SWMP Type	STORAGE VOLUME (m^3 / ha) FOR IMPERVIOUS LEVEL				
		35%	55%	70.0%	70%	85%
Enhanced	Wet Pond	140	190	**225**	225	250
Normal	Wet Pond	90	110		130	150
Basic	Wet Pond	60	75		85	95

* Table 3.2 from the MOE SWMP Planning & Design Manual, 2004, pg 3-10



COLE ENGINEERING

Stage - Storage Calculations
Pond 9 Permanent Pool
Town of Newmarket
L10-523
Date: July 26, 2013

Input Data

	Depth	Area		Elevation
1	0.00	2980		262.45
2	0.50	3480	1573.3	262.95
3	1.40	4470	5002.3	263.95
4	2.00	5690	7928.3	264.45

Output Volume

SEGMENT VOLUME

1615	1573.333	1573.33
3577.5	3429	5002.33
3048	2926	7928.33

CHECKING

ELEV	h	Vcalc'd
262.60	0.000	0
264.10	1.500	5449
264.60	2.000	7928
264.60	2.000	7928

Matrix Calculation

1	1	0	3147	
1	2	3	5002	
2	4	8	7928	
1	1	0	3147	
0	-1	-2	-597	
0	-3	-8	-1635	
1	1	0	3147	
0	-1	-2	-597	
0	0	-2	-269	
1	1	0	3147	
0	1	2	474	
0	0	1	119	
1	1	0	3117	
0	1	0	248	
0	0	1	119	
1	0	0	**2992.8**	**=a**
0	1	0	**248.4**	**=b**
0	0	1	**118.7**	**=c**

Depth (m)	Elevation (m)	Volume (m^3)
0.00	262.45	0.0
0.10	262.55	301.9
0.20	262.65	609.4
0.30	262.75	923.4
0.40	262.85	1244.5
0.50	262.95	1573.3
0.60	263.05	1910.7
0.70	263.15	2257.4
0.80	263.25	2614.0
0.90	263.35	2981.2
1.00	263.45	3359.8
1.10	263.55	3750.6
1.20	263.65	4154.1
1.30	263.75	4571.1
1.40	263.85	5002.3
1.50	263.95	5448.5
1.60	264.05	5910.3
1.70	264.15	6388.5
1.80	264.25	6883.8
1.90	264.35	7396.8
2.00	264.45	7928.3

Forebay Sizing
Pond 9 Forebay
Town of Newmarket
L09-301
Date: July 26, 2013

Forebay Sizing

Settling Calculations

Proposed Forebay Length	**40 m**	water line
Proposed Forebay Width	**15 m**	bottom width

$$Dist = \sqrt{\frac{rQ_P}{V_S}}$$

Eq. 4.5 MOE SWM Planning and Design Manual, 2003

Water Quality Design Peak Flow Rate from Pond (Q_p)	0.06	m^3/s	(25 mm, 4 Hour Chicago)
Length to Width Ratio of Forebay (r)	2.5	:1	
Settling Velocity (V_s)	0.00030	m/s	
Minimum Forebay Length for Settling	**22.4**	**m**	
Settling Velocity Achieved in Forebay	**0.00009**	**m/s**	

The 40 m long forebay exceeds the minimum 22.4 m settling length and achieves a settling velocity of 0.00009 m/s, which is less than the minimum settling velocity of 0.0003 m/s in a proposed forebay.

Dispersion Length Calculations

$$Dist = \frac{8Q}{dV_F}$$

Eq. 4.6 MOE SWM Planning and Design Manual, 2003

Inlet Flowrate (Q)	2.45	m^3/s	(5 Year, 4 Hour CHI)
Permanent Pool Depth in Forebay	2.5	m	
Desired velocity of fluid jet in forebay (V_f)	0.5	m/s	
Minimum Dispersion Length	**15.7**	**m**	
Minimum Bottom Width	**2.0**	**m**	

The proposed forebay meets all minimum size requirements for achieving desired velocities.

Achieved fluid jet velocity of 5 yr inlet flow in forebay	**0.2**	**m/s**

The proposed forebay has a 5 year inlet fluid jet velocity of 0.2 m/s, therefore it is less than the desired maximum velocity of 0.5 m/s in a proposed forebay.

APPENDIX I
Phosphorus Loading

Ontario

MINISTRY OF THE ENVIRONMENT

Database Version: V 1.5 Release Update
Update Date: 16-Jan-12

Project DEVELOPMENT Summary

DEVELOPMENT: L09-301 Marianneville
Subwatershed: West Holland

Pre-Development Landuse	Area (ha)	P coeff (kg/ha)	Pload (kg/yr)
Hay-Pasture	2.025	0.12	0.24
High Intensity - Comm/Industria	9.817	1.82	17.87
High Intensity - Residential	47.757	1.32	63.04
Open Water	1.464	0.26	0.38
Sod Farm / Golf Course	36.957	0.24	8.87

Total Pre-Developed Area (ha): **98.0200**

Total Pre-Developed Phosphorus Load (kg/yr): **90.40**

POST-DEVELOPMENT EXPORT

Post-Development Landuse	Area (ha)	P coeff (kg/ha)	Best Management Practice applied with Reduction Potential		Pload (kg/yr)
Hay-Pasture	1.529	0.12	Wet Detention Ponds	63%	0.07
e 80% of phosphorus" as per LSRCA Technical Guidelines for Stormwater Management Submissions November 2010.					
High Intensity - Comm/Industria	9.681	1.82	Wet Detention Ponds	63%	6.52
e 80% of phosphorus" as per LSRCA Technical Guidelines for Stormwater Management Submissions November 2010.					
High Intensity - Residential	0	1.32	NONE	0%	0.00
High Intensity - Residential	73.729	1.32	Wet Detention Ponds	63%	36.01
e 80% of phosphorus" as per LSRCA Technical Guidelines for Stormwater Management Submissions November 2010.					
Open Water	4.49	0.26	Wet Detention Ponds	63%	0.43
e 80% of phosphorus" as per LSRCA Technical Guidelines for Stormwater Management Submissions November 2010.					
Sod Farm / Golf Course	8.59	0.24	Wet Detention Ponds	63%	0.76
e 80% of phosphorus" as per LSRCA Technical Guidelines for Stormwater Management Submissions November 2010.					

PostDeveloped Area Altered:	**98.02**	Pre-Developed Phosphorus EXPORT:	**90.40**
Total PreDeveloped Area:	**98.02**	Post-Developed EXPORT (without BMP):	**118.35**
Unaffected Area:	**0**	Post-Developed EXPORT (with BMP):	**43.79**
		Total Phosphorus Reduction Potential:	**46.6**
			(kg/year)

DEVELOPMENT: L09-301 Marianneville
Subwatershed: West Holland

CONSTRUCTION EXPORT

Total Pre-Developed Phosphorus Load (kg/yr):	**90**
Construction Phase Total Load (kg) :	to be determined
Construction Phase Ammortized Annual Load Over 8 years (kg/yr) :	to be determined
Post Development Total Load (kg/yr) :	**44**

Total Load (kg/yr): Post Development + Construction

Conclusion: **Net Reduction in Load**

APPENDIX J

Town of Newmarket Engineering Design Criteria Summary

drainage areas and/or in-stream works to neighbouring private properties must be adequately addressed. Written permission from affected Landowners must be sought in cases where acknowledged impacts are proposed and any governing legislation, in this regard, must be strictly followed.

C1.02 Rainfall Data

The Town of Newmarket previously adopted the City of Scarborough Intensity/Duration/Frequency (IDF) curves for the 1:5 to 1:100 year storms only. The 1:100 year storm IDF was based on data taken from Pearson Airport and is still considered to be appropriate for Newmarket.

The more frequent IDF curves were based on Yarnell and have lower intensities than what is considered to be realistic for this area. The Town will continue to use the 1:5 year storm Yarnell IDF curve of $I=2464\ (T+16)^{-1.0}$ but only for the initial sizing of the storm sewer system. This will minimize conflicts in sewer design when new systems drain into older sewers and will provide a consistent level of convenience within the Town.

Rainfall IDF curves to be used are defined by the following equations:

1:2 year	$I = 648\ (T+4)^{-0.784}$ mm/hr
1:5 year	$I = 930\ (T+4)^{-0.798}$ mm/hr
1:10 year	$I = 1021\ (T+3)^{-0.787}$ mm/hr
1:25 year	$I = 1100\ (T+2)^{-0.776}$ mm/hr
1:50 year	$I = 1488\ (T+3)^{-0.803}$ mm/hr
1:100 year	$I = 1770\ (T+4)^{-0820}$ mm/hr

C1.03 Hydrology and Hydrologic Modelling

The estimation of peak design flow rates can be done using the Modified Rational Method or computer model simulation. The Modified Rational Method is typically used to design storm sewers and estimate peak flow rates from small urban areas. Its application should be limited to scenarios where the time of concentration (T_c) is less than approximately 30 minutes. The time of concentration (T_c) shall be determined as outlined in Section C4.03.

Computer analyses are best suited to large urban areas, rural areas and designing municipal SWM facilities.

The minimum and maximum duration of design storms are 4 hours and 24 hours respectively. Hyetographs of the design storms selected by the Town (distribution based on the Toronto-Pearson data and a 10 minute discretization) are provided in Appendix 3:

- 24 hour SCS (i.e. pond design)
- 4 hour Chicago distribution (i.e. HGL analyses)
- 24 hour Chicago distribution (where requested) (i.e. pond design).

The Town or LSRCA may request other design storm lengths and distributions for evaluation during the pre-consultation process.

C1.04 Levels of Service

The level of service to be provided by the storm drainage system is listed in Table C-1 unless stipulated otherwise. The planning of access routes for emergency services (i.e. police, fire, ambulance) may result in higher levels of service as determined by the Town.

Table C-1: Levels of Service for Major and Minor Systems

Item	Level of Service	Comments
Storm Sewers	1:5 year storm (Yarnell)	• catchbasin density such that sewers capacity largely used during 1:5 year storm
Hydraulic Gradeline	1:100 year storm	• no closer than 0.5 m between 1:100 year storm hydraulic gradeline and finished basement floor elevations
Major System	1:100 year storm	• large drainage areas may require classification as a floodplain using regulatory storm criteria (LSRCA) • overland flow cannot exceed width or flow capacity of right-of-way
Culverts	Per MTO Directive B-100	• refer to Table C-2
Stormwater Management	1:100 year storm	• unless otherwise directed by Town
Critical Infrastructure	Regional Storm or Greater	• very special cases to be specified at the discretion of the Town

Storm sewers are to be initially sized for the 1:5 year storm as per Table C-1. The Town of Newmarket Storm Sewer Design Sheet is included in Appendix 4. Subsequent hydraulic gradeline analyses and stormwater

1:2 Year 24 Hour SCS Design Storm

P_{total} – 52.12 mm

Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs	Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs
.20	.51	6.20	1.02	12.20	10.67	18.20	.76
.40	.51	6.40	1.02	12.40	6.60	18.40	.76
.60	.51	6.60	1.02	12.60	4.83	18.60	.76
.80	.51	6.80	1.02	12.80	4.57	18.80	.76
1.00	.51	7.00	1.02	13.00	3.30	19.00	.76
1.20	.51	7.20	1.02	13.20	2.79	19.20	.76
1.40	.51	7.40	1.02	13.40	2.79	19.40	.76
1.60	.51	7.60	1.02	13.60	2.79	19.60	.76
1.80	.51	7.80	1.02	13.80	2.79	19.80	.76
2.00	.51	8.00	1.02	14.00	2.79	20.00	.76
2.20	.51	8.20	1.52	14.20	1.52	20.20	.51
2.40	.51	8.40	1.52	14.40	1.52	20.40	.51
2.60	.51	8.60	1.52	14.60	1.52	20.60	.51
2.80	.51	8.80	1.52	14.80	1.52	20.80	.51
3.00	.51	9.00	1.52	15.00	1.52	21.00	.51
3.20	.51	9.20	1.52	15.20	1.52	21.20	.51
3.40	.51	9.40	1.52	15.40	1.52	21.40	.51
3.60	.51	9.60	1.52	15.60	1.52	21.60	.51
3.80	.51	9.80	1.52	15.80	1.52	21.80	.51
4.00	.51	10.00	1.52	16.00	1.52	22.00	.51
4.20	1.02	10.20	3.05	16.20	1.02	22.20	.51
4.40	1.02	10.40	3.05	16.40	1.02	22.40	.51
4.60	1.02	10.60	3.05	16.60	1.02	22.60	.51
4.80	1.02	10.80	3.05	16.80	1.02	22.80	.51
5.00	1.02	11.00	3.05	17.00	1.02	23.00	.51
5.20	1.02	11.20	4.06	17.20	1.02	23.20	.51
5.40	1.02	11.40	5.84	17.40	1.02	23.40	.51
5.60	1.02	11.60	13.21	17.60	1.02	23.60	.51
5.80	1.02	11.80	28.96	17.80	1.02	23.80	.51
6.00	1.02	12.00	60.45	18.00	1.02	24.00	.51

Use to compute stormwater detention volumes.

1:5 Year 24 Hour SCS Design Storm

P_{total} – 62.43 mm

Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs	Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs
.20	.76	6.20	1.27	12.20	12.19	18.20	1.27
.40	.76	6.40	1.27	12.40	7.62	18.40	1.27
.60	.76	6.60	1.27	12.60	5.59	18.60	1.27
.80	.76	6.80	1.27	12.80	5.08	18.80	1.27
1.00	.76	7.00	1.27	13.00	3.81	19.00	1.27
1.20	.76	7.20	1.27	13.20	3.05	19.20	1.02
1.40	.76	7.40	1.27	13.40	3.05	19.40	1.02
1.60	.76	7.60	1.27	13.60	3.05	19.60	1.02
1.80	.76	7.80	1.27	13.80	3.05	19.80	1.02
2.00	.76	8.00	1.27	14.00	3.05	20.00	1.02
2.20	.76	8.20	1.78	14.20	1.78	20.20	1.02
2.40	.76	8.40	1.78	14.40	1.78	20.40	1.02
2.60	.76	8.60	1.78	14.60	1.78	20.60	1.02
2.80	.76	8.80	1.78	14.80	1.78	20.80	1.02
3.00	.76	9.00	1.78	15.00	1.78	21.00	1.02
3.20	.76	9.20	1.78	15.20	1.78	21.20	.76
3.40	.76	9.40	1.78	15.40	1.78	21.40	.76
3.60	.76	9.60	1.78	15.60	1.78	21.60	.76
3.80	.76	9.80	1.78	15.80	1.78	21.80	.76
4.00	.76	10.00	1.78	16.00	1.78	22.00	.76
4.20	1.27	10.20	3.30	16.20	1.27	22.20	.76
4.40	1.27	10.40	3.30	16.40	1.27	22.40	.76
4.60	1.27	10.60	3.30	16.60	1.27	22.60	.76
4.80	1.27	10.80	3.30	16.80	1.27	22.80	.76
5.00	1.27	11.00	3.30	17.00	1.27	23.00	.76
5.20	1.27	11.20	4.57	17.20	1.27	23.20	.76
5.40	1.27	11.40	6.60	17.40	1.27	23.40	.76
5.60	1.27	11.60	15.24	17.60	1.27	23.60	.76
5.80	1.27	11.80	33.27	17.80	1.27	23.80	.76
6.00	1.27	12.00	69.60	18.00	1.27	24.00	.76

Use to compute stormwater detention volumes.

1:25 Year 24 Hour SCS Design Storm

P_{total} – 95.96 mm

Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs	Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs
.20	1.02	6.20	2.03	12.20	18.80	18.20	2.03
.40	1.02	6.40	2.03	12.40	11.68	18.40	2.03
.60	1.02	6.60	2.03	12.60	8.38	18.60	2.03
.80	1.02	6.80	2.03	12.80	8.13	18.80	2.03
1.00	1.02	7.00	2.03	13.00	5.59	19.00	2.03
1.20	1.02	7.20	2.03	13.20	4.83	19.20	1.52
1.40	1.02	7.40	2.03	13.40	4.83	19.40	1.52
1.60	1.02	7.60	2.03	13.60	4.83	19.60	1.52
1.80	1.02	7.80	2.03	13.80	4.83	19.80	1.52
2.00	1.02	8.00	2.03	14.00	4.83	20.00	1.52
2.20	1.02	8.20	2.79	14.20	2.79	20.20	1.52
2.40	1.02	8.40	2.79	14.40	2.79	20.40	1.52
2.60	1.02	8.60	2.79	14.60	2.79	20.60	1.52
2.80	1.02	8.80	2.79	14.80	2.79	20.80	1.52
3.00	1.02	9.00	2.79	15.00	2.79	21.00	1.52
3.20	1.02	9.20	2.79	15.20	2.79	21.20	1.02
3.40	1.02	9.40	2.79	15.40	2.79	21.40	1.02
3.60	1.02	9.60	2.79	15.60	2.79	21.60	1.02
3.80	1.02	9.80	2.79	15.80	2.79	21.80	1.02
4.00	1.02	10.00	2.79	16.00	2.79	22.00	1.02
4.20	2.03	10.20	5.08	16.20	2.03	22.20	1.02
4.40	2.03	10.40	5.08	16.40	2.03	22.40	1.02
4.60	2.03	10.60	5.08	16.60	2.03	22.60	1.02
4.80	2.03	10.80	5.08	16.80	2.03	22.80	1.02
5.00	2.03	11.00	5.08	17.00	2.03	23.00	1.02
5.20	2.03	11.20	7.11	17.20	2.03	23.20	1.02
5.40	2.03	11.40	10.41	17.40	2.03	23.40	1.02
5.60	2.03	11.60	23.37	17.60	2.03	23.60	1.02
5.80	2.03	11.80	51.56	17.80	2.03	23.80	1.02
6.00	2.03	12.00	107.44	18.00	2.03	24.00	1.02

Use to compute stormwater detention volumes.

1:100 Year 24 Hour SCS Design Storm

P_{total} – 112.42 mm

Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs	Time hrs	Rain mm/hr	Time hrs	Rain mm/hrs
.20	1.27	6.20	2.29	12.20	21.84	18.20	2.29
.40	1.27	6.40	2.29	12.40	13.72	18.40	2.29
.60	1.27	6.60	2.29	12.60	9.91	18.60	2.29
.80	1.27	6.80	2.29	12.80	9.40	18.80	2.29
1.00	1.27	7.00	2.29	13.00	6.60	19.00	2.29
1.20	1.27	7.20	2.29	13.20	5.59	19.20	1.78
1.40	1.27	7.40	2.29	13.40	5.59	19.40	1.78
1.60	1.27	7.60	2.29	13.60	5.59	19.60	1.78
1.80	1.27	7.80	2.29	13.80	5.59	19.80	1.78
2.00	1.27	8.00	2.29	14.00	5.59	20.00	1.78
2.20	1.27	8.20	3.30	14.20	3.30	20.20	1.78
2.40	1.27	8.40	3.30	14.40	3.30	20.40	1.78
2.60	1.27	8.60	3.30	14.60	3.30	20.60	1.78
2.80	1.27	8.80	3.30	14.80	3.30	20.80	1.78
3.00	1.27	9.00	3.30	15.00	3.30	21.00	1.78
3.20	1.27	9.20	3.30	15.20	3.30	21.20	1.27
3.40	1.27	9.40	3.30	15.40	3.30	21.40	1.27
3.60	1.27	9.60	3.30	15.60	3.30	21.60	1.27
3.80	1.27	9.80	3.30	15.80	3.30	21.80	1.27
4.00	1.27	10.00	3.30	16.00	3.30	22.00	1.27
4.20	2.29	10.20	6.10	16.20	2.29	22.20	1.27
4.40	2.29	10.40	6.10	16.40	2.29	22.40	1.27
4.60	2.29	10.60	6.10	16.60	2.29	22.60	1.27
4.80	2.29	10.80	6.10	16.80	2.29	22.80	1.27
5.00	2.29	11.00	6.10	17.00	2.29	23.00	1.27
5.20	2.29	11.20	8.13	17.20	2.29	23.20	1.27
5.40	2.29	11.40	11.94	17.40	2.29	23.40	1.27
5.60	2.29	11.60	27.43	17.60	2.29	23.60	1.27
5.80	2.29	11.80	59.94	17.80	2.29	23.80	1.27
6.00	2.29	12.00	126.49	18.00	2.29	24.00	1.27

Use to compute stormwater detention volumes.

APPENDIX K
Statement of Limiting Conditions and Assumptions

Statement of Limiting Conditions and Assumptions

1. This Report/Study (the "Work") has been prepared at the request of, and for the exclusive use of, the Owner, and its affiliates (the "Intended Users"). No one other than the Intended Users has the right to use and rely on the Work without first obtaining the written authorization of Cole Engineering Group Ltd. (Cole Engineering) and its Owner.

2. Cole Engineering expressly excludes liability to any party except the Intended Users for any use of, and/or reliance upon, the Work.

3. Cole Engineering notes that the following assumptions were made in completing the Work:

   a) the land use description(s) supplied to us are correct;
   b) the surveys and data supplied to Cole Engineering by the Owner are accurate;
   c) market timing, approval delivery and secondary source information is within the control of Parties other than Cole Engineering; and
   d) there are no encroachments, leases, covenants, binding agreements, restrictions, pledges, charges, liens or special assessments outstanding, or encumbrances which would significantly affect the use or servicing.

   Investigations have not been carried out to verify these assumptions. Cole Engineering deems the sources of data and statistical information contained herein to be reliable, but we extend no guarantee of accuracy in these respects.

4. Cole Engineering accepts no responsibility for legal interpretations, questions of survey, opinion of title, hidden or inconspicuous conditions of the property, toxic wastes or contaminated materials, soil or sub-soil conditions, environmental, engineering or other factual and technical matters disclosed by the Owner, the Client, or any public agency, which by their nature, may change the outcome of the Work. Such factors, beyond the scope of this Work, could affect the findings, conclusions and opinions rendered in the Work. We have made disclosure of related potential problems that have come to our attention. Responsibility for diligence with respect to all matters of fact reported herein rests with the Intended Users.

5. Cole Engineering practices engineering in the general areas of infrastructure and transportation. It is not qualified to and is not providing legal or planning advice in this Work.

6. The legal description of the property and the area of the site were based upon surveys and data supplied to us by the Owner. The plans, photographs, and sketches contained in this report are included solely to aide in visualizing the location of the property, the configuration and boundaries of the site, and the relative position of the improvements on the said lands.

7. We have made investigations from secondary sources as documented in the Work, but we have not checked for compliance with by-laws, codes, agency and governmental regulations, etc., unless specifically noted in the Work.

8. Because conditions, including capacity, allocation, economic, social, and political factors change rapidly and, on occasion, without notice or warning, the findings of the Work expressed herein, are as of the date of the Work and cannot necessarily be relied upon as of any other date without subsequent advice from Cole Engineering.

9. The value of proposed improvements should be applied only with regard to the purpose and function of the Work, as outlined in the body of this Work. Any cost estimates set out in the Work are based on construction averages and subject to change.

10. Neither possession of the Work, nor a copy of it, carries the right of publication. All copyright in the Work is reserved to Cole Engineering. The Work shall not be disclosed, produced or reproduced, quoted from, or referred to, in whole or in part, or published in any manner, without the express written consent of Cole Engineering and the Owner.

11. The Work is only valid if it bears the professional engineer's seal and original signature of the author, and if considered in its entirety. Responsibility for unauthorized alteration to the Work is denied.